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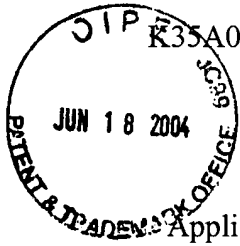
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K35A0614 (LQM 2462-2002/WESDIG.094A)

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant : Scott T. Hughes
Appl. No. : 09/585,129
Filed : May 31, 2000
For : SYSTEM AND METHOD OF
RECEIVING ADVERTISEMENT
CONTENT FROM ADVERTISERS
AND DISTRIBUTING THE
ADVERTISING CONTENT TO A
NETWORK OF PERSONAL
COMPUTERS
Examiner : Firmin Backer
Group Art Unit : 3621

APPELLANT'S BRIEF PURSUANT TO 37 C.F.R. § 1.192

UNITED STATES PATENT AND TRADEMARK OFFICE
Board of Patent Appeals and Interferences
P.O. Box 2327
Arlington, Virginia 22202

Dear Sir:

Applicant (Appellant herein) appeals the final rejection of Claims 1-10 set forth in the September 17, 2003 Final Office Action. Appellant submitted a Notice of Appeal by Certificate of Mailing on March 17, 2004. According to the return postcard, the Notice of Appeal was received in the Board of Patent Appeals and Interferences on March 23, 2004. Thus, the two-month deadline for filing this appeal brief was Monday, May 24, 2004.

This appeal brief is filed in triplicate pursuant to 37 C.F.R. § 1.192(a). Appellant is enclosing a check in the amount of \$320 to cover the \$320 fee for filing an appeal brief pursuant to 37 C.F.R. § 1.191 and 1.17(c).

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I. REAL PARTIES IN INTEREST

The real party in interest of the above-captioned application is the assignee, Keen Personal Media, Inc., a subsidiary of Western Digital Corporation of Lake Forest, California.

II. RELATED APPEALS AND INTERFERENCES

Appellant is unaware of any related appeal or interference.

III. STATUS OF CLAIMS

The present application was originally filed with Claims 1-10 on May 31, 2000. Claims 6-10 were amended during prosecution of the present application. Claims 1-10 were finally rejected by the Examiner in the September 17, 2003 Final Office Action. No claims have been allowed in the present application, and Claims 1-10 are the subject of this appeal.

In accordance with 37 C.F.R. § 1.192(c)(9), a copy of the set of claims involved in this appeal is included as Appendix A attached hereto.

IV. STATUS OF AMENDMENTS

As set forth in Section III, Claims 6-10 were amended during the prosecution of the present application. No amendment has been filed subsequent to the final rejection.

V. SUMMARY OF APPELLANT'S INVENTION

Appellant's invention relates generally to advertising, and more particularly, relates to distributing advertising content to a network of personal computers. Certain embodiments of Appellant's invention address various disadvantages of existing methods of presenting advertising in a computing environment. For example, using existing methods, a company can provide advertising materials accessible to users via the Internet by maintaining a website. However, the users must take an affirmative step and "navigate" to the website. As another example using existing methods, advertising content can be periodically transmitted to a client computer and displayed to the user during idle times. However, if the user actively uses the

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computer, the advertisement data is never displayed to the user. (*See*, page 1, line 11 - page 2, line 2 of the specification.)

One aspect of Appellant's invention is a method of operating a content delivery system for distributing advertising content to users of personal computers. Identification data is collected from a network of personal computers which are configured to periodically receive and store advertising content. The personal computers are also configured to display the advertising content while or before bootloading a user selected application environment. After receiving the advertising content from an advertiser, the advertising content is formatted for storage and display in the personal computers. Using the collected identification data, the formatted advertising content is then distributed to the personal computers. (*See*, page 2, lines 5-12 of the specification.)

Another aspect of Appellant's invention is a content delivery system for distributing advertising data to a network of personal computers. The content delivery system comprises an identification database comprising identification data which uniquely identifies a computer or a user in the network of personal computers. The content delivery system further comprises an advertisement database comprising advertising data formatted for storage and display in the network of personal computers while or before bootloading a selected application environment. A collection module collects the identification from the network of personal computers and stores the collected information in the identification database. A formatting module formats and stores the advertisement data in the advertisement database. A control module distributes the formatted advertising data to the network of personal computers upon the occurrence of one or more events. (*See*, page 2, lines 13-23 of the specification.)

Typically, during the boot process of a personal computer, sterile information regarding the boot process is displayed by the personal computer. The user typically responds by performing non-computer related activities, or alternatively, staring blankly at the screen. Advantageously, certain embodiments of Appellant's invention present advertisement data to a user during or before the bootloading process. In this way, certain embodiments of Appellant's invention allow advertisers to display advertisement content to users during a time which is

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otherwise unproductive. In many instances, the boot process is repeated daily and represents a significant opportunity for presenting advertising which can be informative and entertaining during an otherwise unproductive time span (*See*, page 9, lines 8-14 of the specification.)

VI. ISSUE PRESENTED ON APPEAL

The following issues are presented on appeal:

Whether Appellant's claimed invention should be deemed obvious where the cited references do not teach or suggest the claimed subject matter; and

Whether Appellant's claimed invention should be deemed obvious where there is no suggestion in the prior art to combine the cited references.

VII. GROUPING OF CLAIMS

For the purposes of this appeal only, Appellant groups the pending claims (Claims 1-10) in a single group, since all the pending claims were rejected under the same grounds. In the following discussion, Appellant provides arguments for patentability the pending claims.

VIII. ARGUMENT

For the Board's convenience, Appellant is including copies of the references discussed herein in Appendix B, and copies of the cases relied upon herein in Appendix C.

A. DISCUSSION OF THE REFERENCES RELIED UPON BY EXAMINER

In the Final Office Action mailed September 17, 2003, the Examiner rejects Claims 1-10 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2002/0072965 A1 of Merriman et al. ("Merriman") in view of U.S. Patent No. 6,339,761 to Cottingham ("Cottingham").

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1. Merriman

Merriman discloses a system and method for targeting the delivery of advertisements over a network such as the Internet. The system of Merriman comprises at least one affiliate website which a user can access via the Internet. In response to an information request (e.g., HTTP message) by the user, the affiliate website transmits one or more messages containing the requested information. These messages from the affiliate website can include access information for advertising objects that do not reside on the affiliate's web server. This access information includes a link with an IP address to an advertiser server process. The user's browser then uses the IP address to access the advertising object from the advertisement server. (*See*, paragraphs [0017]-[0018] of Merriman.)

The advertisement server stores the advertising objects to be transmitted to individual users. The advertisement server also gathers information about the individual users to be used for targeted Internet advertising. For example, the information gathered by the advertisement server can include a user identification, IP address, domain type, time zone, location of the user, standard industrial code for the user's network, the particular advertisements seen and the number of times each such advertisement is seen, the advertisements that were selected or "clicked on," and the pages on which the various users' advertisements were seen. (*See*, paragraphs [0021]-[0022] of Merriman.)

2. Cottingham

Cottingham discloses a system and method for an Internet service provider (ISP) with access to demographic data regarding the ISP's customers to target advertising content to individual customers or groups of customers accessing the Internet. (*See*, column 1, line 38 - column 2, line 20.) In response to a request for information from an ISP customer to an Internet content provider, the ISP receives a webpage, including an advertisement, from the Internet content provider. The ISP removes the advertisement from the received webpage and inserts a desired advertisement in the received webpage. Alternatively, the ISP may not remove embedded advertising from the received webpage, yet may still insert the desired advertisement

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therein. The ISP then communicates the received webpage, including the inserted desired advertisement, to the ISP customer. (*See*, column 2, lines 21-31 of Cottingham.)

In another embodiment disclosed by Cottingham, the desired advertisement may be communicated by the ISP to the ISP customer before the ISP communicates the webpage or other information requested by the ISP customer from the content provider. The advertisement may be displayed on the computer for a predetermined period of time before communication of the webpage from the ISP to the ISP customer. (*See*, column 7, lines 50-58 of Cottingham.)

B. DISCUSSION OF THE ISSUES ON APPEAL

1. Claims 1-10 are not obvious because the combination of Merriman and Cottingham does not teach or suggest the claimed subject matter.

The Examiner states that Merriman teaches all the limitations of Claims 1-5 except for “wherein the personal computers are configured to periodically receive and store advertising content and display the advertising content while or before bootloading a user selected application environment” (emphasis added). The Examiner also states that Merriman teaches all the limitations of Claims 6-10 except for “wherein the advertising data is formatted for storage and display in the network of personal computers while or before the network of personal computers bootload a selected application environment” (emphasis added). The Examiner further states that the limitations of Claims 1-10 not found in Merriman are taught by Cottingham and that it would have been obvious to one of ordinary skill in the art to modify Merriman by including these limitations from Cottingham.

For the reasons set forth below, Appellant respectfully disagrees with the Examiner’s analysis and conclusions. Appellant respectfully submits that Claims 1-10 are patentably distinguished over Merriman in view of Cottingham and that the Examiner has not presented a *prima facie* case of obviousness.

A *prima facie* obviousness rejection under 35 U.S.C. § 103(a) requires that all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981 (C.C.P.A.

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1974); M.P.E.P. § 2143.03, pages 2100.128-129, February 2003 revision; M.P.E.P. § 706.02(j), pages 700.44-45, February 2003 revision.

Appellant respectfully submits that Cottingham does not teach or suggest the limitations of Claims 1-10 that the Examiner acknowledges are missing from Merriman. In particular, Cottingham does not teach or suggest the limitation of Claim 1 in which “the personal computers are configured to periodically receive and store advertising content and display the advertising content while or before bootloading a user selected application environment” (emphasis added). In addition, Cottingham does not teach or suggest the limitation of Claim 6 in which “the advertising data is formatted for storage and display in the network of personal computers while or before the network of personal computers bootload a selected application environment” (emphasis added).

As explained by the present application at page 4, lines 16-19 (emphasis added):

the advertisement data is formatted for display at the personal computers while or before the bootloading of a user selected application environment. ... The advertising data is then stored into an advertising database 320.

Furthermore, as explained at page 4, line 31 - page 5, line 2 of the present application (emphasis added):

As defined herein, bootloading of a user selected application environment comprises executing one or more programs to configure a personal computer to a state wherein the personal computer can execute an application program specified by the user after boot up.

The present application further explains at page 9, lines 8-14 (emphasis added):

Advantageously, advertisement data may be presented to a user during a period in which the user normally receives sterile information regarding the boot process. Typically, during the boot process, a user performs non-computer related activities, or alternatively, stares blankly at the screen. Using the present invention, advertisers can display advertisement content to a user while the bootloading process is occurring. In many instances, the boot process is repeated daily and represents a significant opportunity for presenting advertising which can be informative and entertaining during an otherwise unproductive time span.

In this way, the present application describes a content delivery system and a corresponding method for distributing advertising to personal computer users during or before bootloading to

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beneficially engage the user during an otherwise unproductive time while the user waits for the computer to boot up.

In contrast, Cottingham (as well as Merriman) discloses displaying advertising after the user's computer has booted up and is running an active browser. Both Merriman and Cottingham teach presenting advertising content in response to a user accessing the Internet via an active browser, which is only possible after bootloading the application environment.

Cottingham discloses a system and method in which an Internet Service Provider ("ISP") customer using an active browser requests information (e.g., a webpage) from a content provider. In response, the ISP communicates an advertisement to the ISP customer immediately before communicating the requested information. As disclosed by Cottingham at column 5, lines 38-43 (emphasis added):

the ISP 10, in response to a request for information from an ISP customer 20 to a content provider 30, receives a web-page 32 from the content provider 30 that may or may not include an advertisement 34. The ISP 10 may insert a desired advertisement 40 in the web-page 32 and communicate the modified web-page 32 to the ISP customer 20.

As further disclosed by Cottingham at column 7, lines 50-58 (a passage cited by the Examiner in the Office Action mailed March 28, 2003):

an advertisement (or advertising) may be communicated to the ISP 10 to the ISP customer 20 before the ISP 10 communicates a web-page 32 or other information requested by the ISP customer 20 from a content provider 30. The first-communicated advertisement may be displayed on the computer 50 of the ISP customer 20 for a predetermined period of time before communication of the web-page 32 from the ISP 10 to the ISP customer 20.

In this passage, Cottingham discloses a system and method in which an ISP customer requests information from a content provider (e.g., a web-page requested using a browser), but the ISP merely delays communicating the requested information, opting instead to first communicate an advertisement to the ISP customer. The method and system described by Cottingham does not teach receiving and storing advertising content and displaying the advertising content while or before bootloading a user selected application environment, as recited by the pending claims.

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Neither Merriman nor Cottingham teaches or suggests receiving and storing advertising content and displaying the advertising content while or before bootloading a user selected application environment. Therefore, independent Claims 1 and 6 each defines features that are not taught or suggested by either Merriman or Cottingham, so that independent Claims 1 and 6 are patentably distinguished over Merriman in view of Cottingham. Appellant submits that the Examiner's rejection of Claims 1 and 6 under 35 U.S.C. § 103(a) is not supported and should be reversed by the Board.

Claims 2-5 depend from Claim 1, and include the limitations of Claim 1 that are not taught or suggested by Merriman in view of Cottingham. Claims 7-10 depend from Claim 6, and include the limitations of Claim 6 that are not taught or suggested by Merriman in view of Cottingham. Furthermore, each of Claims 2-5 further recites limitations of particular utility in addition to the limitations of Claim 1 and each of Claims 7-10 further recites limitations of particular utility in addition to the limitations of Claim 6. Therefore, Claims 2-5 and 7-10 are patentably distinguished over Merriman in view of Cottingham. Appellant submits that the Examiner's rejection of Claims 2-5 and 7-10 under 35 U.S.C. § 103(a) is not supported and should be reversed by the Board.

2. Claims 1-10 are not obvious because the prior art does not provide a motivation to combine Merriman and Cottingham.

In addition, Appellant submits that the Examiner has not presented a *prima facie* case of obviousness of Claims 1-10 because the Examiner has not provided a motivation in the prior art to combine Merriman and Cottingham.

Obviousness can only be established where there is some teaching, suggestion, or motivation to combine or modify the teachings of the prior art to produce the claimed invention. See *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988); M.P.E.P. Section 2143.01, page 2100.125, February 2003 revision. To support the Examiner's assertion of obviousness, the Examiner must provide clear and particular findings as to the reason one skilled in the art, with no knowledge of the claimed invention, would have selected these components and combined them in the manner

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claimed. *See, e.g., In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000); *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999).

The Examiner states that it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Merriman to include the teachings of Cottingham. The Examiner further states that such a combination would have allowed advertisers to track consumer responses to specific elements of the web page/application environment as well as to better infer information about the user's interests in an effort to qualify the user prior to presenting subsequent advertising.

However, neither cited reference provides any motivation for modifying Merriman to include the teachings of Cottingham. The Examiner has not identified any other prior art reference for the motivation to combine Merriman and Cottingham. Therefore, Appellant submits that the Examiner has not provided clear and particular findings in the prior art for a motivation to combine Merriman and Cottingham. A *prima facie* case of obviousness can not be established by relying upon the claimed invention to provide the suggestion or motivation to combine. *In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999). Appellant submits that the Examiner has impermissibly used hindsight by relying on the claimed invention for the motivation to combine Merriman and Cottingham. Claims 1-10 are therefore patentably distinguished from the prior art. Appellant submits that the Examiner's rejection of Claims 1-10 under 35 U.S.C. § 103(a) is not supported and should be reversed by the Board.

IX. CONCLUSION

As set forth above, the final rejection of Claims 1-10 under 35 U.S.C. § 103(a) as being unpatentable over Merriman in view of Cottingham should be reversed. Appellant respectfully submits that the claims pending in the present application are patentably distinguished over the cited prior art. Appellant respectfully requests that this Board overturn the Examiner's rejections and to remand this application to the Examiner with directions to pass all pending claims to allowance.

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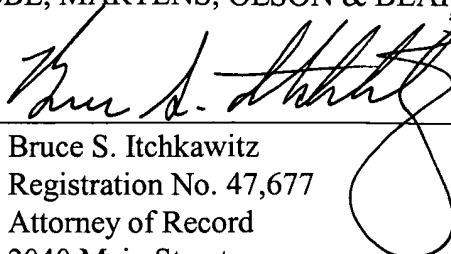
Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: _____

6/16/04

By: _____


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APPENDIX A

Claims Presented on Appeal

1. (Rejected) A method of operating a content delivery system for distributing advertising content to users of personal computers, the method comprising:
collecting identification data from a network of personal computers, wherein the personal computers are configured to periodically receive and store advertising content and display the advertising content while or before bootloading a user selected application environment;
receiving the advertising content from an advertiser;
formatting the advertising content for storage and display in the personal computer; and
distributing, using the collected identification data, the formatted advertising content to the personal computers.
2. (Rejected) The method of Claim 1, wherein the identification data comprises a unique identifier that is associated with one of the personal computers.
3. (Rejected) The method of Claim 1, wherein the identification data comprises an internet protocol address.
4. (Rejected) The method of Claim 1, additionally comprising:
receiving preference data from the personal computers; and
selecting the advertisement data that is to be distributed, at least in part, based upon the received preferences.
5. (Rejected) The method of Claim 1, additionally comprising:
associating a fee with data representative of the advertiser; and
storing the fee in a storage device.

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6. (Rejected) A content delivery system for distributing advertising data to a network of personal computers, the content delivery system comprising:

an identification database comprising identification data, wherein the identification data uniquely identifies a computer or a user in the network of personal computers;

an advertisement database comprising advertising data, wherein the advertising data is formatted for storage and display in the network of personal computers while or before the network of personal computers bootload a selected application environment;

a collection module for collecting the identification from the network of personal computers and storing the collection information in the identification database;

a formatting module for formatting and storing advertisement data in the advertisement database; and

a control module that distributes the formatted advertising data to the network of personal computers upon the occurrence of one or more events.

7. (Rejected) The system of Claim 6, wherein the identification data comprises a unique identifier that is associated with one of the personal computers.

8. (Rejected) The system of Claim 6, wherein the identification data comprises an internet protocol address.

9. (Rejected) The system of Claim 6, wherein the control module receives preference data from the personal computers, and wherein the control module selects the advertisement data that is to be distributed, at least in part, based upon the received preferences.

10. (Rejected) The system of Claim 6, wherein the control module associates a fee with data representative of the advertiser; and wherein the control modules stores the fee in a storage device that is associated with one of the personal computers.

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APPENDIX B

Copies of References Discussed in Appeal Brief

Copies of the following references are attached hereto:

U.S. Patent Publication No. 2002/0072965 A1 to Merriman et al., published on June 13, 2002, for *Method of Delivery Targeting and Measuring Advertising Over Networks*.

U.S. Patent No. 6,339,761 to Cottingham, issued on January 15, 2002, for *Internet Service Provider Advertising System*.

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APPENDIX C

Cases Cited in Appeal Brief

Copies of the following references are attached hereto:

In re Royka, 490 F.2d 981 (C.C.P.A. 1974).

In re Fine, 837 F.2d 1071 (Fed. Cir. 1988).

In re Dembiczak, 175 F.3d 994, 999 (Fed. Cir. 1999).

In re Kotzab, 217 F.3d 1365, 1371 (Fed. Cir. 2000).

M.P.E.P. § 706.02(j), pages 700.44-45, February 2003 revision.

M.P.E.P. Section 2143.01, page 2100-125, February 2003 revision.

M.P.E.P. § 2143.03, pages 2100.128-129, February 2003 revision.

Application of Stephen F. ROYKA
and Robert G. Martin.
Patent Appeal No. 9092.

United States Court of Customs
and Patent Appeals.
Feb. 7, 1974.

Appeal from the decision of the Patent Office Board of Appeals affirming the examiner's rejection of patent application, Serial No. 648,701, for a "responsive answer system." The Court of Customs and Patent Appeals, Rich, J., held that an answer sheet for use in self-instruction and testing, in which were printed in "response areas" meaningful information in permanent printing and confusing information in printing which could be removed, as by an erasure, both being legible so that a student, seeing a choice of answers to a question, was required to make a selection, the correctness of the selection being shown by the information which was then removed by the erasure, was not anticipated by prior patents and was therefore patentable.

Reversed.

Patents \S 68(1.20)

"Responsive answer system," answer sheet for use in self-instruction and testing, in which were printed in "response areas" meaningful information in permanent printing and confusing information in printing which could be removed, as by erasure, both being legible so that student, seeing choice of answers to question, was required to make selection, correctness of selection being shown by information which was then removed by erasure, was not anticipated by prior patents and was therefore patentable. 35 U.S.C.A. \S 102, 103.

Michael H. Shanahan, Rochester, N. Y., of record, for appellant; Thomas M. Webster, Rochester, N. Y., Boris Haskell, Washington, D. C. (Paris, Haskell & Levine), Washington, D. C., of counsel.

Joseph F. Nakamura, Washington, D. C., for the Commissioner of Patents.
Fred W. Sherling, Washington, D. C., of counsel.

Before MARKEY, Chief Judge, and RICH, BALDWIN, LANE and MILLER, Judges.

RICH, Judge.

This appeal is from the decision of the Patent Office Board of Appeals affirming the examiner's rejection of claims 28 and 30-36 of application serial No. 648,701, filed June 26, 1967, entitled "Responsive Answer System." We reverse.

The Invention

The appealed claims are directed to a device in the nature of an answer sheet for use in self-instruction and testing. The answer sheet may be associated with questions or separate therefrom. The essential features of the invention are that there are printed on the answer sheet in "response areas" meaningful information in permanent printing and confusing information in printing which can be removed, as by an eraser, both being legible so that a student, seeing a choice of answers to a question, must make a selection. Having made a selection, he then applies an eraser to the selected response area and some of the information will be readily removed. What remains advises him of the correctness or otherwise of his answer. The following figures from the drawings are illustrative:

PERMANENT MEANINGFUL
INFORMATION PLUS REMOV-
ABLE CONFUSING INFOR-
MATION

A. TRUE
NO
ES
WRONG

B. FALSE
YES
RIGHT

PERMANENT MEANINGFUL
INFORMATION

A. YES

B. NO

FIG. 1A

FIG. 1B

Fig. 1A shows two response areas to a given question before any removing ac-

tion by the student has taken place and Fig. 1B shows the permanent information remaining in each after erasure of the removable information. Of course, if the student makes an initial choice of area A, showing up "YES" or some other indication of a correct answer, he will not need to proceed further and erase the B area. In a modified form of the invention, a wrong selection, plus erasure, may expose, instead of or in addition to a statement that the answer is wrong, a number or other reference to further material which is to be studied.

A preferred method of printing the permanent meaningful information and the removable confusing information is by that type of xerography in which a fusible toner is used, the permanence of the printing depending on the extent to which the toner image is "fixed" or fused by heat. By successive printings of the two kinds of information with fixing to different degrees, one image can be made permanent and the other made subject to easy removal, both images retaining such similarity of appearance that the user of the answer sheet cannot tell them apart.

Claim 28 is the principal claim, all others being dependent thereon, and reads as follows:

28. A device for selectively indicating information comprising

a support having response areas for presenting information for selection, permanent printing indicative of meaningful information permanently fixed to said support within a response area, and

removable printing indicative of confusing information removably fixed to said support within a response area,

said meaningful and confusing information being substantially legible even when said permanent and removable printing are fixed over one another on said support,

said permanent and removable printing being substantially similar such that an observer cannot determine

which information is permanent and which is removable

whereby the information within a response area is selected by attempting to remove the printing therein with the failure to remove printing identifying meaningful information.

Claims 30-36 add limitations which need not be considered except for noting that claims 33 and 34 alone specify the use of a xerographic toner, for which reason they were rejected on a different ground from the other claims.

The Rejection

The following references were relied on:

Reid et al. (Reid)	356,695	Jan. 25, 1887
Bernstein et al. (Bernstein)	3,055,117	Sep. 25, 1962
Lein et al. (Lein)	3,364,857	Jan. 23, 1968 (filed Feb. 2, 1966)

Claims 28, 30, 31, and 32 were rejected as anticipated under 35 U.S.C. § 102 by Bernstein; claims 28, 31, 32, 35, and 36 were rejected as anticipated under § 102 by Reid; and claims 33 and 34 were rejected under 35 U.S.C. § 103 for obviousness, on either Bernstein or Reid in view of Lein. These were the examiner's rejections and the board affirmed them, adhering to its decision on reconsideration.

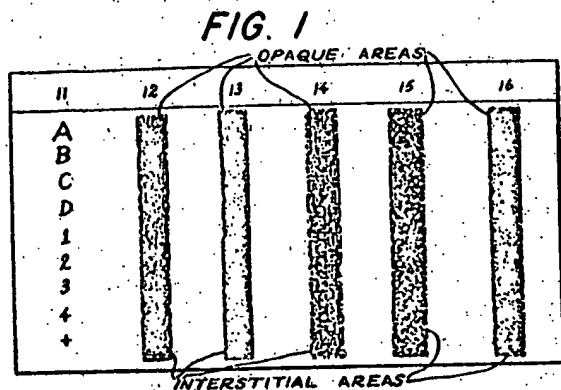
Bernstein discloses an answer sheet in which printed information representing a response is "temporarily concealed from the observer" and he discloses a number of different ways of effectively concealing the response. His specification states:

The objects of the invention are accomplished by utilizing the hiding media to confuse the participant and to render the response and the hiding media indistinguishable and thus conceal the presence, absence, nature or position of the response from the participant. This may be effectuated by careful attention being paid to a number of factors including the design,

Cite as 490 F.2d 981 (1974).

color and position of the hiding or confusing media.

Fig. 1 of Bernstein's drawings, illustrates some of his concealing means:



The following is the written description:

Referring now to the drawing, FIG. 1 illustrates some of the many optically confusing patterns which may be positioned between the printed structure to be concealed and the point of observation. Column 11 shows the information which is to be concealed. This information is repeated in columns 12 through 16 but in each case is concealed by a pattern in accordance with the present invention. Column 12 utilizes a pattern comprising an alphabetical maze in both line and half tone screen. Column 13 utilizes a pattern comprising an absorbing field having a plurality of irregular dot-like interstices. Column 14 utilizes a pattern comprising a maze of plus signs combined with dots. Columns 15 and 16 illustrate irregular and non-repetitious patterns.

Bernstein says that if at least 50% of the response is actually covered by the opaque portions of the confusion pattern, complete concealment is obtained. He also says that added means of concealment may be used, such as scoring and embossing and perforating the paper in order to scatter the light or let it shine through.

Reid is entitled "Transformation Picture and Print." The invention is said to be useful for advertisements, Christmas cards, birthday cards, valentines, and the like and as a source of amuse-

ment and instruction for children. It consists of a picture or print, part of which is permanently printed and part of which is removable from the paper on which it is printed. For the latter various soluble undercoatings or inks are described. If the picture is washed with a solvent, which may be water, the removable part disappears and the pictorial and/or typographic matter changes. The invention is illustrated by a typical nineteenth century temperance propaganda piece depicting the evils of drink. In the finished picture there are three scenes from left to right: Scene 1, the innocent child leads her father home from the pub; Scene 2, Father sits slumped in the kitchen chair with his bottle beside him, the family wash hanging above his head, this picture being entitled "The Effects of Drink"; Scene 3, Mother stands in front of a sign reading "Pawn Shop." Across the bottom of the picture is a legend which says "Wash the above and see what water will do." Fig. II shows the result of washing with water: Scene 1, a handsome young man and his happy daughter stroll on the street; Scene 2, Father sits erect in a well-appointed room at a cloth-covered table, apparently having a cup of tea, obviously a gentleman; Scene 3, Mother beams from the sideline and the Pawn Shop sign has vanished. Two new subscriptions appear and the words "The" and "Drink" have disappeared, the resultant being a new picture title reading "The Beneficial Effects of Temperance." "The Beneficial" and "Temperance" were covered by some soluble opaque in the original picture. No doubt the overall effect is instruction. Perhaps there was amusement in bringing about the transformation.

Lein relates to xerography and is relied on only for its disclosure of the removability of partially fused toner and the permanence of fully fused toner.

OPINION

As to the § 102 anticipation rejections, it will suffice to consider independent claim 28. If it is not fully met by Reid

or Bernstein, neither are the more limited dependent claims. It is elementary that to support an anticipation rejection, all elements of the claim must be found in the reference. We do not find claim 28 anticipated by Bernstein because, as we read the claim, it requires the display of *legible* meaningful and *legible* confusing *information* simultaneously, between which the user of the device may make a selection before he undertakes to remove any of the information from the response area selected by him. The element we find most clearly missing, contrary to the reasoning of the examiner and the board, is the legible confusing *information*. The Patent Office proposes to read this limitation on Bernstein's confusion patterns which are nothing but meaningless obscuring screens, conveying no information and providing the user with no basis for making a *selection*, as called for by claim 28. In appellants' device the legible confusing information—i. e., the wrong answers—are legible in the sense that they can be read as intelligible words, not merely a jumble of type serving to obscure the words of the wrong answers.

Appellants were fully aware of Bernstein and discussed its disclosures in their specification, distinguishing from this and other prior art, saying, in part:

The inventive concept hereof confuses not by physical blocking as taught by the prior art, but by compounding, associating (including disarranging) permanent information with confusing information, usually at least some of which is similar in character to the permanent information as to render it impossible to tell which is permanent and which is removable confusing information. In the invention, generally no attempt is made to de-designedly physically cover the permanent information, but to confuse it beyond interpretation by the presentation of extraneous removable, confusing information.

Claims are not to be read in a vacuum and while it is true they are to be given

the broadest *reasonable* interpretation during prosecution, their terms still have to be given the meaning called for by the specification of which they form a part. We cannot read the terms "legible" and "information" on Bernstein's confusion patterns, as did the examiner and the board. They are not "legible," as appellants use the term, and they convey no information.

As to anticipation by Reid, we find neither appellants' basic concept nor the substance of claim 28 to be disclosed. Apparently the solicitor could find little to support the rejection in Reid for all he says in his brief—so far as claim 28 is concerned—is:

Reid discloses a sheet which may be used for instruction and which may have a removable design partly covering a fixed design * * *. Therefore, the disclosure of the reference encompasses the arrangement wherein a removable design covers a fixed design with both designs being substantially legible.

But claim 28 does not call for an arrangement wherein a removable design covers a fixed design. It calls for response areas, which Reid does not have, containing meaningful information in permanent printing together with removable printing conveying confusing information, both legible at the same time, between which a "selection" can be made. The only choice offered to the user by Reid is to follow the instruction to wash the whole visible picture with water or other solvent, thus removing the overprinting, to discover what the permanent picture is. The Patent Office attempt to read claim 28 on this reference is a tour de force. We hold that Reid does not anticipate for failure to meet the limitations of claim 28 to "response areas," to the presentation of two categories of information (meaningful permanent and removable-confusing) within such areas, and the possibility of selection. Anticipation requires a finding that the claimed invention be disclosed. It is not enough to say that appellants' invention and the reference are

both usable for instruction and both consist of permanent and removable printings on paper, as did the solicitor.

The dependent claims rejected with claim 28, as anticipated under § 102, are not anticipated since claim 28 is not anticipated. Some of them merely add features which are disclosed by the references and some do not. Insofar as they do not, they further negative anticipation. The examiner recognized this fact as to claims 33 and 34, which are limited to xerography, and therefore did not reject them under § 102. Similarly, he did not reject claim 30 on Reid or claims 35 and 36 on Bernstein. We find that claims 35 and 36 contain limitations which additionally distinguish from Reid. We have already noted that Reid has no "response areas" as required by claim 28 and so Reid does not disclose the structure of claim 35 which additionally requires both the correct and incorrect answers to appear within the same response area.

As to claim 36, the examiner said it "is merely a printed matter variation of the design of the reference," Reid. This is not a valid reason for rejection. Printed matter may very well constitute structural limitations upon which patentability can be predicated. We have commented on this matter in *re Jones*, 373 F.2d 1007, 54 CCPA 1218 (1967); and in *re Miller*, 418 F.2d 1392, 57 CCPA 809 (1969), and will not repeat ourselves. The limitations of claim 36 are not remotely suggested by Reid.

There remains the § 103 rejection of claims 33 and 34. Do they, taken together with all of the limitations of claim 28 from which they depend, define obvious subject matter? The difference between claim 28 and these two dependent claims is that they add the limitations to xerography. If Bernstein and Reid showed the claimed invention except for xerography, the addition of the Lein reference would make the subject matter of the claims obvious. But that is not the situation here. Adding the knowledge of xerographic technology to Bernstein or Reid still does not make the

invention of claims 33 and 34 obvious for the same reasons we have given above in discussing anticipation. The essence of appellants' invention, as set forth in claim 28, is still missing notwithstanding the addition of the Lein reference and we see nothing in the combinations of references which would have made the invention obvious to one of ordinary skill in the art at the time it was made. We will, therefore, reverse this rejection.

The decision of the board is *reversed*.
Reversed.



CHRYSLER CORPORATION, Plaintiff-Appellant,

v.

John T. DUNLOP, Director Cost of Living Council, et al., Defendants-Appellees.

No. DC-18.

Temporary Emergency Court of Appeals.
Dec. 5, 1973.

In manufacturer's action for declaratory and injunctive relief with respect to order of the Cost of Living Council deferring consideration of the merits of manufacturer's proposed price increase, the United States District Court for the District of Columbia, Barrington D. Parker, J., denied preliminary injunction, and manufacturer appealed. The Temporary Emergency Court of Appeals held that if the order was not supported by substantial evidence, manufacturer would have substantial likelihood of prevailing on the merits, that the trial court should have made findings of fact and conclusions of law on the question of whether the order was supported by substantial evidence, and that the trial court should consider manufacturer's proposal that it would escrow all moneys

nell "assumed the risk of unavailable milling time", and that Connell's contract obligations were not conditioned thereon.

[3] Both the board, and the government in its brief, offer theories as to how Connell might have managed, at whatever cost, to obtain milled rice for timely delivery. These theories, in view of the USDA regulations, are relevant only to the question of whether Connell's failure to perform was "beyond [its] control and without [its] fault or negligence". If the government created the situation that caused or contributed to Connell's late delivery, it can not be held as a matter of law that Connell was required to exceed reasonable efforts in order to compensate for this unwarranted government action.

The government cites *Jennie-O Foods, Inc. v. United States*, 580 F.2d 400, 409-10 (Ct.Cl.1978), which held that "unanticipated economic hardship" did not excuse failure to perform where the contractor had not shown that "the product (healthy turkeys) was unavailable within the boundaries of a reasonable area." There was no issue in *Jennie-O* of governmental contribution to the failure to perform; nor was a theory of strict liability applied. The issues there raised, as here, are fact-dependent, and in *Jennie-O* were fully developed at trial.

[4] Connell must be enabled to develop the facts pertinent to its defense that the government, acting in its sovereign or contractual capacities, contributed to the delay; the extent of that contribution; and whether Connell was at fault or negligent; for these facts are material to the issues of liability, and the extent thereof. The determination must be made as to whether exculpation has been shown under the circumstances. Public policy and the national interest, as well as the principles of contract law, so require. As the Court explained in *United States v. Brooks-Calloway Co.*, 318 U.S. 120, 122, 63 S.Ct. 474, 476, 87 L.Ed. 658 (1943), the purpose of the standard proviso in government contracts that authorizes such relief is:

Thus contractors know they are not to be penalized for unexpected impediments to prompt performance, and, since their

bids can be based on foreseeable and probable, rather than possible hindrances, the Government secures the benefit of lower bids and an enlarged selection of bidders.

Although the government argues that Connell "failed to meet its burden" on summary judgment, the denial of discovery related to this defense contributed to this failure.

REVERSED AND REMANDED.



In re David H. FINE

No. 87-1319.

United States Court of Appeals,
Federal Circuit.

Jan. 26, 1988.

The Board of Patent Appeals and Interferences of the United States Patent and Trademark Office affirmed rejection of claims of application for patent for system for detecting and measuring minute quantities of nitrogen compounds, and applicant appealed. The Court of Appeals, Mayer, Circuit Judge, held that: (1) it would not have been obvious to substitute nitric oxide detector for sulfur dioxide detector in prior system, and (2) sulfur detection system did not teach use of claimed temperature range.

Reversed.

Edward S. Smith, Circuit Judge, dissented and filed opinion.

1. Patents \S 16.33

System for detecting and measuring minute quantities of nitrogen compounds was not obvious in light of prior art for separating, identifying, and monitoring sulfur compounds or method for measuring chemiluminescence of reaction between ni-

tric oxide and ozone which required continuous flowing of gaseous mixture into reaction chamber; method for measuring sulfur deliberately sought to avoid nitrogen compounds, and claimed invention retained each nitrogen compound constituent of gaseous sample in chromatograph for individual time period. 35 U.S.C.A. § 103.

2. Patents ⇐114.19, 114.21

Patent and Trademark Office has burden to establish prima facie case of obviousness, which it may satisfy only by showing some objective teaching in prior art, or that knowledge generally available to one of ordinary skill and art would lead that individual to combined relevant teachings of references. 35 U.S.C.A. § 103.

3. Patents ⇐26(1)

Whether particular combination might be "obvious to try" is not legitimate test of patentability. 35 U.S.C.A. § 103.

4. Patents ⇐16.5

Patent which described preferred temperature range for separating, identifying and quantitatively monitoring sulfur compounds could be distinguished from claimed method for detecting and measuring minute quantities of nitrogen compounds which limited temperature to prevent nitrogen from other sources, where purpose of temperature limitation in prior art was to avoid formation of unwanted sulfides.

Morris Relson, Darby & Darby, P.C., New York City, for appellant. With him on the brief was Beverly B. Goodwin.

Lee E. Barrett, Associate Sol., Office of the Solicitor, Arlington, Va., for appellee. With him on the brief were Joseph F. Nakamura, Sol. and Fred E. McKelvey, Deputy Sol.

Before FRIEDMAN, SMITH and
MAYER, Circuit Judges.

OPINION

MAYER, Circuit Judge.

David H. Fine appeals from a decision of the Board of Patent Appeals and Interfer-

ences of the United States Patent and Trademark Office (Board) affirming the rejection of certain claims of his application, Serial No. 512,874, and concluding that his invention would have been obvious to one of ordinary skill in the art and was therefore unpatentable under 35 U.S.C. § 103. We reverse.

BACKGROUND

A. The Invention.

The invention claimed is a system for detecting and measuring minute quantities of nitrogen compounds. According to Fine, the system has the ability to detect the presence of nitrogen compounds in quantities as minute as one part in one billion, and is an effective means to detect drugs and explosives, which emanate nitrogen compound vapors even when they are concealed in luggage and closed containers.

The claimed invention has three major components: (1) a gas chromatograph which separates a gaseous sample into its constituent parts; (2) a converter which converts the nitrogen compound effluent output of the chromatograph into nitric oxide in a hot, oxygen-rich environment; and (3) a detector for measuring the level of nitric oxide. The claimed invention's sensitivity is achieved by combining nitric oxide with ozone to produce nitrogen dioxide which concurrently causes a detectable luminescence. The luminescence, which is measured by a visual detector, shows the level of nitric oxide which in turn is a measure of nitrogen compounds found in the sample.

The appealed claims were rejected by the Patent and Trademark Office (PTO) under 35 U.S.C. § 103. Claims 60, 63, 77 and 80 were rejected as unpatentable over Eads, Patent No. 3,650,696 (Eads) in view of Warnick, et al., Patent No. 3,746,513 (Warnick). Claims 62, 68, 69, 79, 85 and 86 were rejected as unpatentable over Eads and Warnick in view of Glass, et al., Patent No. 3,207,585 (Glass).

B. The Prior Art.

1. Eads Patent.

Eads discloses a method for separating, identifying and quantitatively monitoring

sulfur compounds. The Eads system is used primarily in "air pollution control work in the scientific characterization of odors from sulfur compounds."

The problem addressed by Eads is the tendency of sulfur compounds "to adhere to or react with the surface materials of the sampling and analytical equipment, and/or react with the liquid or gaseous materials in the equipment." Because of this, the accuracy of measurement is impaired. To solve the problem, the Eads system collects an air sample containing sulfur compounds in a sulfur-free methanol solution. The liquid is inserted into a gas chromatograph which separates the various sulfur compounds. The compounds are next sent through a pyrolysis furnace where they are oxidized to form sulfur dioxide. Finally, the sulfur dioxide passes through a measuring device called a micro-coulometer which uses titration cells to calculate the concentration of sulfur compounds in the sample.

2. Warnick Patent.

Warnick is directed to a means for detecting the quantity of pollutants in the atmosphere. By measuring the chemiluminescence of the reaction between nitric oxide and ozone, the Warnick device can detect the concentration of nitric oxide in a sample gaseous mixture.

Warnick calls for "continuously flowing" a sample gaseous mixture and a reactant containing ozone into a reaction chamber. The chemiluminescence from the resulting reaction is transmitted through a light-transmitting element to produce continuous readouts of the total amount of nitric oxide present in the sample.

3. Glass Patent.

The invention disclosed in Glass is a device for "completely burning a measured amount of a substance and analyzing the combustion products." A fixed amount of a liquid petroleum sample and oxygen are supplied to a flame. The flame is then spark-ignited, causing the sample to burn. The resulting combustion products are then collected and measured, and from this mea-

surement the hydrogen concentration in the sample is computed.

C. The Rejection.

The Examiner rejected claims 60, 63, 77 and 80 because "substitution of the [nitric oxide] detector of Warnick for the sulfur detector of Eads would be an obvious consideration if interested in nitrogen compounds, and would yield the claimed invention." He further asserted that "Eads teaches the [claimed] combination of chromatograph, combustion, and detection, in that order.... Substitution of detectors to measure any component of interest is well within the skill of the art." In rejecting claims 62, 68, 69, 79, 85 and 86, the Examiner said, "Glass et al. teach a flame conversion means followed by a detector, and substitution of the flame conversion means of Glass et al. for the furnace of Eads would be an obvious equivalent and would yield the claimed invention." The Board affirmed the Examiner's rejection.

DISCUSSION

A. Standard of Review.

Obviousness under 35 U.S.C. § 103 is "a legal conclusion based on factual evidence." *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1535, 218 USPQ 871, 876 (Fed.Cir.1983) (quoting *Stevenson v. Int'l Trade Comm'n*, 612 F.2d 546, 549, 204 USPQ 276, 279 (CCPA 1979)). Therefore, an obviousness determination is not reviewed under the clearly erroneous standard applicable to fact findings, *Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 956, 220 USPQ 592, 596 (Fed.Cir.1983); it is "reviewed for correctness or error as a matter of law." *In re De Blauwe*, 736 F.2d 699, 703, 222 USPQ 191, 195 (Fed.Cir.1984).

To reach a proper conclusion under § 103, the decisionmaker must step backward in time and into the shoes worn by [a person having ordinary skill in the art] when the invention was unknown and just before it was made. In light of all the evidence, the decisionmaker must then determine whether ... the claimed invention as a whole would have been

obvious at *that* time to *that* person. 35 U.S.C. § 103. The answer to that question partakes more of the nature of law than of fact, for it is an ultimate conclusion based on a foundation formed of all the probative facts.

Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1566, 1 USPQ2d 1593, 1595-96 (Fed.Cir.1987).

B. Prima Facie Obviousness.

Fine says the PTO has not established a *prima facie* case of obviousness. He contends the references applied by the Board and Examiner were improperly combined, using hindsight reconstruction, without evidence to support the combination and in the face of contrary teachings in the prior art. He argues that the appealed claims were rejected because the PTO thought it would have been "obvious to try" the claimed invention, an unacceptable basis for rejection.

[1, 2] We agree. The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. See *In re Piascki*, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed.Cir.1984). It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. *In re Lalu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed.Cir.1984); see also *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 297 n. 24, 227 USPQ 657, 667 n. 24 (Fed.Cir.1985); *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 782 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir.1984). This it has not done. The Board points to nothing in the cited references, either alone or in combination, suggesting or teaching Fine's invention.

The primary basis for the Board's affirmation of the Examiner's rejection was that it would have been obvious to substitute the Warnick nitric oxide detector for the Eads sulfur dioxide detector in the Eads system. The Board reiterated the Examiner's bald assertion that "substitution of one type of detector for another in the system of Eads

would have been within the skill of the art," but neither of them offered any support for or explanation of this conclusion.

Eads is limited to the analysis of sulfur compounds. The particular problem addressed there is the difficulty of obtaining precise measurements of sulfur compounds because of the tendency of sulfur dioxide to adhere to or react with the sampling analytic equipment or the liquid or gaseous materials in the equipment. It solves this problem by suggesting that the gaseous sample containing sulfur compounds be absorbed into sulfur-free methanol and then inserted into a gas chromatograph to separate the sulfur compounds.

There is no suggestion in Eads, which focuses on the unique difficulties inherent in the measurement of sulfur, to use that arrangement to detect nitrogen compounds. In fact, Eads says that the presence of nitrogen is undesirable because the concentration of the titration cell components in the sulfur detector is adversely affected by substantial amounts of nitrogen compounds in the sample. So, instead of suggesting that the system be used to detect nitrogen compounds, Eads deliberately seeks to avoid them; it warns against rather than teaches Fine's invention. See *W.L. Gore & Assoc. v. Garlock, Inc.*, 721 F.2d 1540, 1550, 220 USPQ 303, 311 (Fed.Cir. 1983) (error to find obviousness where references "diverge from and teach away from the invention at hand"). In the face of this, one skilled in the art would not be expected to combine a nitrogen-related detector with the Eads system. Accordingly, there is no suggestion to combine Eads and Warnick.

Likewise, the teachings of Warnick are inconsistent with the claimed invention, to some extent. The Warnick claims are directed to a gas stream from engine exhaust "continuously flowing the gaseous mixtures into the reaction chamber" to obtain "continuous readouts" of the amount of nitric oxide in the sample. In other words, it contemplates measuring the total amount of nitric oxide in a continuously flowing gaseous mixture of unseparated nitrogen constituents. By contrast, in Fine each

nitrogen compound constituent of the gaseous sample is retained in the chromatograph for an individual time period so that each exits in discrete, time-separated pulses.* By this process, each constituent may be both identified by its position in time sequence, and measured. The claimed system, therefore, diverges from Warnick and teaches advantages not appreciated or contemplated by it.

[3] Because neither Warnick nor Eads, alone or in combination, suggests the claimed invention, the Board erred in affirming the Examiner's conclusion that it would have been obvious to substitute the Warnick nitric oxide detector for the Eads sulfur dioxide detector in the Eads system. *ACS Hosp. Sys.*, 732 F.2d at 1575-77, 221 USPQ at 931-33. The Eads and Warnick references disclose, at most, that one skilled in the art might find it obvious to try the claimed invention. But whether a particular combination might be "obvious to try" is not a legitimate test of patentability. *In re Geiger*, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed.Cir.1987); *In re Goodwin*, 576 F.2d 375, 377, 198 USPQ 1, 3 (CCPA 1978).

Obviousness is tested by "what the combined teachings of the references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). But it "cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." *ACS Hosp. Sys.*, 732 F.2d at 1577, 221 USPQ at 933. And "teachings of references can be combined *only* if there is some suggestion or incentive to do so." *Id.* Here, the prior art contains none.

Instead, the Examiner relies on hindsight in reaching his obviousness determination. But this court has said, "To imbue one of ordinary skill in the art with knowledge of

the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." *W.L. Gore*, 721 F.2d at 1553, 220 USPQ at 312-13. It is essential that "the decisionmaker forget what he or she has been taught at trial about the claimed invention and cast the mind back to the time the invention was made ... to occupy the mind of one skilled in the art who is presented only with the references, and who is normally guided by the then-accepted wisdom in the art." *Id.* One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

C. Advantage Not Appreciated by the Prior Art.

[4] The Board erred not only in improperly combining the Eads and Warnick references but also in failing to appreciate that the appealed claims can be distinguished over that combination. A material limitation of the claimed system is that the conversion to nitric oxide occur in the range of 600°C to 1700°C. The purpose of this limitation is to prevent nitrogen from other sources, such as the air, from being converted to nitric oxide and thereby distorting the measurement of nitric oxide derived from the nitrogen compounds of the sample.

The claimed nitric oxide conversion temperature is not disclosed in Warnick. Although Eads describes a preferred temperature of 675°C to 725°C, the purpose of this range is different from that of Fine. Eads requires the 675°C to 725°C range because it affords a temperature low enough to avoid formation of unwanted sulfur trioxide, yet high enough to avoid formation of unwanted sulfides. Fine's temperature

ous constituents exit at discrete intervals is shown by the specification which was before the Board and which may appropriately be considered on appeal. See, e.g., *Astra-Sjuco, A.B. v. United States Int'l Trade Comm'n*, 629 F.2d 682, 686, 207 USPQ 1, 5 (CCPA 1980) (claims must be construed in light of specification).

* The Solicitor argues that the contents of Attachment C of Fine's brief were not before the Board and may not properly be considered here. However, we need not rely on Attachment C. It is merely illustrative of the qualitative separation of nitrogen compounds which occurs in Fine's system. The fact that the vari-

range, in contrast, does not seek to avoid the formation of sulfur compounds or even nitrogen compounds. It enables the system to break down the nitrogen compounds of the sample while avoiding the destruction of background nitrogen gas. There is a partial overlap, of course, but this is mere happenstance. Because the purposes of the two temperature ranges are entirely unrelated, Eads does not teach use of the claimed range. *See In re Geiger*, 815 F.2d at 688, 2 USPQ2d at 1278. The Board erred by concluding otherwise.

D. Unexpected Results.

Because we reverse for failure to establish a *prima facie* case of obviousness, we need not reach Fine's contention that the Board failed to accord proper weight to the objective evidence of unexpected superior results. *Id.*

E. The "Flame" Claims.

Claims 62, 68, 69, 79, 85 and 86 relate to the oxygen-rich flame conversion means of the claimed invention. These "flame" claims depend from either apparatus claim 60 or method claim 77. Dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious. *Hartness Int'l, Inc. v. Simplimatic Eng'g Co.*, 819 F.2d 1100, 1108, 2 USPQ2d 1826, 1831 (Fed.Cir.1987); *In re Abele*, 684 F.2d 902, 910, 214 USPQ 682, 689 (CCPA 1982); *see also In re Ser-naker*, 702 F.2d 989, 991, 217 USPQ 1, 3 (Fed.Cir.1983). In view of our conclusion that claims 60 and 77 are nonobvious, the dependent "flame" claims are also patentable.

CONCLUSION

The Board's decision affirming the Examiner's rejection of claims 60, 62, 63, 68, 69, 77, 79, 80, 85 and 86 of Fine's application as unpatentable over the prior art under 35 U.S.C. § 103 is

REVERSED.

EDWARD S. SMITH, Circuit Judge, dissenting.

I respectfully dissent. I am of the firm belief that the prior art references, relied upon by the PTO to establish its *prima facie* case of obviousness, in combination teach and suggest Fine's invention to one skilled in the art. Also, I firmly believe that Fine failed to rebut the PTO's *prima facie* case. On this basis, I would affirm the board's determination sustaining the examiner's rejection, pursuant to 35 U.S.C. § 103, of Fine's claims on appeal before this court.



**PETROCHEM SERVICES,
INC., Appellant,**

v.

The UNITED STATES, Appellee.

No. 87-1382.

**United States Court of Appeals,
Federal Circuit.**

Decided Jan. 26, 1988.

Government contractor appealed decision of the Armed Services Board of Contract Appeals denying contractor's claim for equitable adjustment of contract to remove oil spilled on naval base. The Court of Appeals, Nichols, Senior Circuit Judge, held that Government's duty to disclose superior knowledge was not legally discharged by Navy supervisor's oral representations, unless contractor's representative heard and understood representations.

Vacated and remanded.

1. United States ⇐70(30)

Disclosure of superior knowledge doctrine applies in situations where contractor undertakes to perform without vital knowledge of fact that affects performance costs

chaft Kohle, M.B.H. v. Shell Oil Co., 112 F.3d 1561, 1564, 42 USPQ2d 1674, 1677 (Fed.Cir.1997). Zebco posits that if the '835 patent is not entitled to the June 1990 filing date of the '586 application, then the invention of the '835 patent was on-sale or in public use more than one year before the July 1992 filing date of the '254 application, which matured into the '835 patent.² However, Zebco does not contend that the applicant impermissibly added new matter to the '254 application. Cf. 35 U.S.C. § 132 (1994) ("No amendment shall introduce new matter into the disclosure of the invention."). Further, there is no dispute that the disclosures of the '586 and '254 applications—and thus the '324 and '835 patents, respectively—are the same in all but a few respects.³ Zebco's position thus reduces to the argument that the claims of the '835 patent violate the written description requirement of section 112, ¶1. But to state the argument is to realize its objection; as we discussed above, the written description of the '835 patent provides ample support for the ordinary and accustomed meaning of the terms of the '835 claims. Thus, the '835 claims, as construed by the district court and this court, are entitled to the benefit of the filing date of the '586 application. No violation of section 102(b)'s on-sale bar has occurred.

IV

Zebco has failed to demonstrate to this court that the disputed claim terms of claim 1 of the '835 patent should be interpreted in a way other than their ordinary and accustomed meaning. Therefore, we find that the district court's claim interpretation, and the summary judgment of infringement conditioned thereon, was not erroneous. We also hold that the district court correctly determined that the relevant claim of the '835 patent, as construed,

2. Johnson does not dispute that products embodying the '835 invention were on sale more than one year prior to the filing of the '254 application in July 1992.

is not invalid. The judgment of the district court is affirmed.

AFFIRMED.



**In re Anita DEMBICZAK and Benson
Zinbarg, Appellants.**

No. 98-1498.

**United States Court of Appeals,
Federal Circuit.**

April 28, 1999.

Board of Patent Appeals and Interferences upheld rejection of application for utility patent, and appeal was taken. The United States Court of Appeals for the Federal Circuit, Cleverger, Circuit Judge, held that: (1) Board erred by rejecting application for patent on plastic trash bags with pumpkin face on grounds of obviousness, without finding suggestion, teaching, or motivation to combine prior art references, and (2) applicant's earlier design patents involving pumpkin faces on bags did not preclude issuance of patent in present case, under obviousness-type double patenting doctrine.

Reversed.

1. Patents \S 113(6)

Federal Circuit determines legal question of obviousness of patent without deference to Board of Patent Appeals and Interferences, and examines any factual findings for clear error. 35 U.S.C.A. § 103(a).

3. The titles and abstracts are different, for example.

2. Patents \S 16(1)

Measuring a claimed invention for obviousness requires the oft-difficult but critical step of casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. 35 U.S.C.A. \S 103(a).

3. Patents \S 16(4)

Best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis of a patent application is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. 35 U.S.C.A. \S 103(a).

4. Patents \S 26(1)

Evidence of a suggestion, teaching, or motivation to combine prior art references, sufficient to render invention obvious and unpatentable, may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved. 35 U.S.C.A. \S 103(a).

5. Patents \S 36(1)

Broad conclusory statements regarding the teaching of multiple references, standing alone, are not evidence sufficient to render invention obvious and unpatentable. 35 U.S.C.A. \S 103(a).

6. Patents \S 16.27

Board of Patent Appeals and Interferences erred by denying for obviousness application for utility patent for orange colored plastic trash bag with markings, which expanded to show face of pumpkin when filled with leaves, when Board cited prior art showing placement of pumpkin faces on crepe paper and which disclosed features of plastic trash bags and concluded that prior art references collectively described all limitations of present claims; Board should have found a suggestion, teaching, or motivation to combine prior art references. 35 U.S.C.A. \S 103(a).

7. Patents \S 113(6)

Federal Circuit would not consider argument made in support of obviousness of patent application, which was not raised before Board of Patent Appeals and Interferences. 35 U.S.C.A. \S 103(a).

8. Patents \S 120

The doctrine of "obviousness-type double patenting" prohibits claims in a second patent which define merely an obvious variation of an invention claimed by the same inventor in an earlier patent. 35 U.S.C.A. \S 103(a).

See publication Words and Phrases for other judicial constructions and definitions.

9. Patents \S 314(5)

Question whether patent application is to be rejected, under obvious-type double patenting doctrine, on grounds that claimed invention was merely an obvious variation on invention disclosed in existing patent, is one of law, which Federal Circuit reviews de novo. 35 U.S.C.A. \S 103(a).

10. Patents \S 120

In some very rare cases, obvious-type double patenting, in which invention claimed in patent application was obvious variation on invention disclosed by existing patent, may be found between design and utility patents. 35 U.S.C.A. \S 103(a).

11. Patents \S 120

When utility patent is sought to be invalidated due to obviousness, in light of previous design patents, rejection under obviousness-type double patenting doctrine is appropriate only if the claims of the two patents cross-read, meaning that the test is whether the subject matter of the claims of the patent sought to be invalidated would have been obvious from the subject matter of the claims of the other patent, and vice versa. 35 U.S.C.A. \S 103(a).

12. Patents \S 28

In order for a design to be unpatentable because of obviousness, there must first be a basic design reference in the

prior art, the design characteristics of which are basically the same as the claimed design. 35 U.S.C.A. § 103(a).

13. Patents — 120

Phrase "having facial indicia thereon," contained in claim of application for utility patent on plastic trash bag with pumpkin face, was not design reference that was basically the same as claimed design covered by design patents on jack-o-lantern faces on bags, and application was consequently not required to be rejected under obviousness-type double patenting doctrine. 35 U.S.C.A. § 103(a).

David P. Gordon, of Stamford, Connecticut, argued for appellant. Of counsel was Thomas A. Gallagher, of Stamford, Connecticut.

John M. Whealan, Associate Solicitor, Office of the Solicitor, of Arlington, Virginia, argued for appellee. With him on the brief were Albin F. Drost, Acting Solicitor, and David R. Nicholson, Associate Solicitor.

Before MAYER, Chief Judge, MICHEL and CLEVENGER, Circuit Judges.

CLEVENGER, Circuit Judge.

Anita Dembiczak and Benson Zinbarg appeal the rejection, upheld by the Board of Patent Appeals and Interferences, of all pending claims in their Application No. 08/427,732. *See Ex Parte Dembiczak*, No. 96-2648, slip op. at 43 (May 14, 1998). Because the Board erred in sustaining rejections of the pending claims as obvious under 35 U.S.C. § 103(a) (Supp.1998), and for obviousness-type double patenting, we reverse.

I

The invention at issue in this case is, generally speaking, a large trash bag made of orange plastic and decorated with lines and facial features, allowing the bag, when filled with trash or leaves, to resemble a Halloween-style pumpkin, or jack-o'-lan-

tern. As the inventors, Anita Dembiczak and Benson Zinbarg (collectively, "Dembiczak") note, the invention solves the long-standing problem of unsightly trash bags placed on the curbs of America, and, by fortuitous happenstance, allows users to express their whimsical or festive nature while properly storing garbage, leaves, or other household debris awaiting collection. Embodiments of the invention—sold under a variety of names, including Giant Stuff-A-Pumpkin, Funkins, Jack Sak, and Bag-O-Fun—have undisputedly been well-received by consumers, who bought more than seven million units in 1990 alone. Indeed, in 1990, the popularity of the pumpkin bags engendered a rash of thefts around Houston, Texas, leading some owners to resort to preventative measures, such as greasing the bags with petroleum jelly and tying them to trees. *See R. Piller, "Halloween Hopes Die on the Vine," Hous. Chron., Oct. 19, 1990, at 13A.*

The road to profits has proved much easier than the path to patentability, however. In July 1989, Dembiczak filed a utility patent application generally directed to the pumpkin bags. In a February 1992 appeal, the Board of Patent Appeals and Interferences ("the Board") reversed the Examiner's rejection, but entered new grounds for rejection. Dembiczak elected to continue prosecution, filing a continuation application to address the new grounds for rejection. Thereafter, the invention made a second appearance before the Board, in April 1993, when the Board both sustained the Examiner's rejection and again entered new grounds for rejection. Again, a continuation application was filed (the instant application). And again the Examiner's rejection was appealed to the Board, which sustained the rejection in a May 14, 1998, decision. *See Dembiczak*, slip op. at 43.

A

The patent application at issue includes claims directed to various embodiments of

the pumpkin bag. Claims 37, 49, 51, 52, 58 through 64, 66 through 69, and 72 through 81 are at issue in this appeal. Though the claims vary, independent claim 74 is perhaps most representative:

74. A decorative bag for use by a user with trash filling material, the bag simulating the general outer appearance of an outer surface of a pumpkin having facial indicia thereon, comprising:

a flexible waterproof plastic trash or leaf bag having

an outer surface which is premanufactured orange in color for the user to simulate the general appearance of the outer skin of a pumpkin, and having

facial indicia including at least two of an eye, a nose and a mouth on the orange color outer surface for forming a face pattern on said orange color outer surface to simulate the general outer appearance of a decorative pumpkin with a face thereon,

said trash or leaf bag having first and second opposite ends, at least said second end having an opening extending substantially across the full width of said trash or leaf bag for receiving the trash filling material,

wherein when said trash or leaf bag is filled with trash filling material and closed, said trash or leaf bag takes the form and general appearance of a pumpkin with a face thereon.

All of the independent claims on appeal, namely 37, 52, 72, and 74, contain limitations that the bag must be "premanufactured orange in color," have "facial indicia," have openings suitable for filling with trash material, and that when filled, the bag must have a generally rounded appearance, like a pumpkin. Independent claims 37, 52, and 72 add the limitation that the bag's height must at least 36 inches. Claim 72 requires that the bag be made of a "weatherproof material," and claim 74, as shown above, requires that the bag be "waterproof." Claim 52 recites a

"method of assembling" a bag with the general characteristics of apparatus claim 37.

B

The prior art cited by the Board includes:

- (1) pages 24-25 of a book entitled "A Handbook for Teachers of Elementary Art," by Holiday Art Activities ("Holiday"), describing how to teach children to make a "Crepe Paper Jack-O-Lantern" out of a strip of orange crepe paper, construction paper cut-outs in the shape of facial features, and "wadded newspapers" as filling;
- (2) page 73 of a book entitled "The Everything Book for Teachers of Young Children," by Martha Shapiro and Valerie Indenbaum ("Shapiro"), describing a method of making a "paper bag pumpkin" by stuffing a bag with newspapers, painting it orange, and then painting on facial features with black paint;
- (3) U.S. Patent No. 3,349,991 to Leonard Kessler, entitled "Flexible Container" ("Kessler"), describing a bag apparatus wherein the bag closure is accomplished by the use of folds or gussets in the bag material;
- (4) U.S. Patent No. Des. 310,023, issued August 21, 1990 to Dembiczak ("Dembiczak '023"), a design patent depicting a bag with a jack-o'-lantern face;
- (5) U.S. Patent No. Des. 317,254, issued June 4, 1991 to Dembiczak ("Dembiczak '254"), a design patent depicting a bag with a jack-o'-lantern face; and,
- (6) Prior art "conventional" plastic lawn or trash bags ("the conventional trash bags").

Using this art, the Board affirmed the Examiner's final rejection of all the independent claims (37, 52, 72, 74) under 35

U.S.C. § 103, holding that they would have been obvious in light of the conventional trash bags in view of the Holiday and Shapiro references. The Board determined that, in its view of the prior art, "the only difference between the invention presently defined in the independent claims on appeal and the orange plastic trash bags of the prior art and the use of such bags resides in the application of the facial indicia to the outer surface of the bag." *Dembiczak*, slip op. at 18. The Board further held that the missing facial indicia elements were provided by the Holiday and Shapiro references' description of painting jack-o'-lantern faces on paper bags. *See id.* at 18-19. Dependent claims 49 and 79, which include a "gussets" limitation, were considered obvious under similar reasoning, except that the references cited against them included Kessler. *See id.* at 7.

The Board also affirmed the Examiner's obviousness-type double patenting rejection of all the independent claims in light of the two *Dembiczak* design patents ('023 and '254) and Holiday. *See id.* at 12. The Board held that the design patents depict a generally rounded bag with jack-o'-lantern facial indicia, and that the Holiday reference supplies the missing limitations, such as the "thin, flexible material" of manufacture, the orange color, the initially-open upper end, and the trash filling material. The Board also stated that the various limitations of the dependent claims—e.g., color, the inclusion of leaves as stuffing, and the dimensions—would all be obvious variations of the depictions in the *Dembiczak* design patents. *See id.* at 8-9. In addition, using a two-way test for obviousness-type double patenting, the Board held that the claims of the *Dembiczak* design patents "do not exclude" the additional structural limitations of the pending utility claims, and thus the design patents were merely obvious variations of the subject matter disclosed in the utility claims. *See id.* at 11. The Board further upheld, on similar grounds and with the inclusion of the Kessler reference, the ob-

viousness-type double patenting rejection of dependent claim 49. *See id.* at 12.

This appeal followed, vesting this court with jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A) (1994).

II

[1] A claimed invention is unpatentable if the differences between it and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103(a) (Supp.1998); *see Graham v. John Deere Co.*, 383 U.S. 1, 14, 86 S.Ct. 684, 15 L.Ed.2d 545, 148 USPQ 459, 465 (1966). The ultimate determination of whether an invention is or is not obvious is a legal conclusion based on underlying factual inquiries including: (1) the scope and content of the prior art; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness. *See Graham*, 383 U.S. at 17-18, 86 S.Ct. 684, 15 L.Ed.2d 545, 148 USPQ at 467; *Miles Labs., Inc. v. Shandon Inc.*, 997 F.2d 870, 877, 27 USPQ2d 1123, 1128 (Fed.Cir.1993). We therefore review the ultimate determination of obviousness without deference to the Board, while examining any factual findings for clear error. *See, e.g., In re Zurko*, 142 F.3d 1447, 1459, 46 USPQ2d 1691, 1700 (Fed.Cir.) (en banc), cert. granted, — U.S. —, 119 S.Ct. 401, 142 L.Ed.2d 326 (1998).

A

[2] Our analysis begins in the text of section 103 quoted above, with the phrase "at the time the invention was made." For it is this phrase that guards against entry into the "tempting but forbidden zone of hindsight," *see Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 873, 228 USPQ 90, 98 (Fed.Cir.1985), overruled on other grounds by *Nobelpharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059, 46 USPQ2d

1097 (Fed.Cir.1998), when analyzing the patentability of claims pursuant to that section. Measuring a claimed invention against the standard established by section 103 requires the oft-difficult but critical step of casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. See, e.g., *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 313 (Fed.Cir.1983). Close adherence to this methodology is especially important in the case of less technologically complex inventions, where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." *Id.*

[3] Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. See, e.g., *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed.Cir.1998) (describing "teaching or suggestion or motivation [to combine]" as an "essential evidentiary component of an obviousness holding"); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed.Cir.1998) ("the Board must identify specifically . . . the reasons one of ordinary skill in the art would have been motivated to select the references and combine them"); *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed.Cir.1992) (examiner can satisfy burden of obviousness in light of combination "only by showing some objective teaching [leading to the combination]"); *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed.Cir.1988) (evidence of teaching or suggestion "essential" to avoid hindsight); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 297, 227 USPQ 657, 667 (Fed.

Cir.1985) (district court's conclusion of obviousness was error when it "did not elucidate any factual teachings, suggestions or incentives from this prior art that showed the propriety of combination"). See also *Graham*, 383 U.S. at 18, 86 S.Ct. 684, 15 L.Ed.2d 545, 148 USPQ at 467 ("strict observance" of factual predicates to obviousness conclusion required). Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight. See, e.g., *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138, 227 USPQ 543, 547 (Fed.Cir.1985) ("The invention must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time."). In this case, the Board fell into the hindsight trap.

[4, 5] We have noted that evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, see *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed.Cir.1996), *Para-Ordnance Mfg. v. SGS Importers Intern., Inc.*, 73 F.3d 1085, 1088, 37 USPQ2d 1287, 1240 (Fed.Cir.1995), although "the suggestion more often comes from the teachings of the pertinent references," *Rouffet*, 149 F.3d at 1355, 47 USPQ2d at 1456. The range of sources available, however, does not diminish the requirement for actual evidence. That is, the showing must be clear and particular. See, e.g., *C.R. Bard*, 157 F.3d at 1352, 48 USPQ2d at 1232. Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence." E.g., *McElmurry v. Arkansas Power & Light Co.*, 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed.Cir.1993) ("Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of

material fact.”); *In re Sichert*, 566 F.2d 1154, 1164, 196 USPQ 209, 217 (CCPA 1977) (“The examiner’s conclusory statement that the specification does not teach the best mode of using the invention is unaccompanied by evidence or reasoning and is entirely inadequate to support the rejection.”). In addition to demonstrating the propriety of an obviousness analysis, particular factual findings regarding the suggestion, teaching, or motivation to combine serve a number of important purposes, including: (1) clear explication of the position adopted by the Examiner and the Board; (2) identification of the factual disputes, if any, between the applicant and the Board; and (3) facilitation of review on appeal. Here, however, the Board did not make particular findings regarding the locus of the suggestion, teaching, or motivation to combine the prior art references.

[6] All the obviousness rejections affirmed by the Board resulted from a combination of prior art references, e.g., the conventional trash or yard bags, and the Holiday and Shapiro publications teaching the construction of decorated paper bags. See *Dembiczak*, slip op. at 6–7. To justify this combination, the Board simply stated that “the Holiday and Shapiro references would have suggested the application of . . . facial indicia to the prior art plastic trash bags.” *Id.* at 18–19. However, rather than pointing to specific information in Holiday or Shapiro that suggest the combination with the conventional bags, the Board instead described in detail the similarities between the Holiday and Shapiro references and the claimed invention, noting that one reference or the other—in combination with each other and the conventional trash bags—described all of the limitations of the pending claims. See *id.* at 18–28. Nowhere does the Board particularly identify any suggestion, teaching, or motivation to combine the children’s art references (Holiday and Shapiro) with the conventional trash or lawn bag references, nor does the Board make specific—or even inferential—findings concerning the identi-

fication of the relevant art, the level of ordinary skill in the art, the nature of the problem to be solved, or any other factual findings that might serve to support a proper obviousness analysis. See, e.g., *Pro-Mold & Tool*, 75 F.3d at 1573, 37 USPQ2d at 1630.

To the contrary, the obviousness analysis in the Board’s decision is limited to a discussion of the ways that the multiple prior art references can be combined to read on the claimed invention. For example, the Board finds that the Holiday bag reference depicts a “premanufactured orange” bag material, see *Dembiczak*, slip op. at 21, finds that Shapiro teaches the use of paper bags in various sizes, including “large”, see *id.* at 22–23, and concludes that the substitution of orange plastic for the crepe paper of Holiday and the paper bags of Shapiro would be an obvious design choice, see *id.* at 24. Yet this reference-by-reference, limitation-by-limitation analysis fails to demonstrate how the Holiday and Shapiro references teach or suggest their combination with the conventional trash or lawn bags to yield the claimed invention. See *Rouffet*, 149 F.3d at 1357, 47 USPQ2d at 1459 (noting Board’s failure to explain, when analyzing the prior art, “what specific understanding or technical principle . . . would have suggested the combination”). Because we do not discern any finding by the Board that there was a suggestion, teaching, or motivation to combine the prior art references cited against the pending claims, the Board’s conclusion of obviousness, as a matter of law, cannot stand. See *C.R. Bard*, 157 F.3d at 1352, 48 USPQ2d at 1232; *Rouffet*, 149 F.3d at 1359, 47 USPQ2d at 1459; *Fritch*, 972 F.2d at 1265, 23 USPQ2d at 1783; *Fine*, 837 F.2d at 1075, 5 USPQ2d at 1600; *Ashland Oil*, 776 F.2d at 297, 227 USPQ at 667.

B

[7] The Commissioner of Patents and Trademarks (“Commissioner”) attempts to justify the Board’s decision on grounds

different from that relied upon by the Board, arguing that one of ordinary skill in the art would have been motivated to combine the references. Of course, in order to do so, the Commissioner must do what the Board did not do below: make specific findings of fact regarding the level of skill in the art ("a designer and manufacturer of trash and leaf bags, particularly one specializing in the ornamental and graphic design of such bags"), Resp't Br. at 14, the relationship between the fields of conventional trash bags and children's crafts, respectively ("[t]he artisan would also have been well aware of the ancillary, corollary, and atypical uses of 'trash' bags such as their application in hobby and art projects"), Resp't Br. at 15, and the particular features of the prior art references that would motivate one of ordinary skill in a particular art to select elements disclosed in references from a wholly different field ("a designer and manufacturer of trash and leaf bags would have recognized the paper bag in Shapiro to be a trash bag and therefore would have been motivated to combine it with the admitted prior art plastic trash and leaf bags to arrive at the claimed invention"), Resp't Br. at 15. The Commissioner also appears to cite additional references in support of his obviousness analysis, noting that at least two design patents (in the record but not cited against the presently pending claims) teach the placement of "graphical information, including text, designs, and even facial indicia, to colored bags." Resp't Br. at 16. This new analysis, apparently cut from whole cloth in view of appeal, does little more than highlight the shortcomings of the decision below, and we decline to consider it. See, e.g., *In re Robertson*, 169 F.3d 743, 746, 49 USPQ2d 1949, 1951 (Fed. Cir.1999) ("We decline to consider [the Commissioner's] newly-minted theory as an alternative ground for upholding the agency's decision."); *In re Soni*, 54 F.3d 746, 751, 34 USPQ2d 1684, 1688 (Fed.Cir. 1995); *In re Hounsfield*, 699 F.2d 1320, 1324, 216 USPQ 1045, 1049 (Fed.Cir.1983) (rejecting an "attempt[] by the Commis-

sioner 'to apply a new rationale to support the rejection.'"); see also 35 U.S.C. § 144 (1994) (an appeal to the Federal Circuit "is taken on the record before The Patent and Trademark Office"). Because the Board has not established a prima facie case of obviousness, see *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed.Cir.1993) ("The PTO bears the burden of establishing a case of prima facie obviousness."), we therefore reverse the obviousness rejections, and have no need to address the parties' arguments with respect to secondary factors.

III

[8, 9] Dembiczak also asks this court to reverse the Board's rejection of the pending claims for obviousness-type double patenting, which is a judicially-created doctrine that seeks to prevent the applicant from expanding the grant of the patent right beyond the limits prescribed in Title 35. See, e.g., *In re Braat*, 937 F.2d 589, 592, 19 USPQ2d 1289, 1291-92 (Fed.Cir. 1991); *In re Longi*, 759 F.2d 887, 892, 225 USPQ 645, 648 (Fed.Cir.1985). See also 35 U.S.C. § 154(a)(2) (Supp.1998) (discussing patent term). The doctrine prohibits claims in a second patent which define "merely an obvious variation" of an invention claimed by the same inventor in an earlier patent. *Braat*, 937 F.2d at 592, 19 USPQ2d at 1292 (quoting *In re Vogel*, 57 C.C.P.A. 920, 422 F.2d 438, 441, 164 USPQ 619, 622 (CCPA 1970)). Thus, unless a claim sought in the later patent is patentably distinct from the claims in an earlier patent, the claim must be rejected. See *In re Goodman*, 11 F.3d 1046, 1052, 29 USPQ2d 2010, 2015 (Fed.Cir.1993); *Vogel*, 422 F.2d at 441, 164 USPQ at 622. This question is one of law, which we review de novo. See *Goodman*, 11 F.3d at 1052, 29 USPQ2d at 2015; *Texas Instruments Inc. v. United States Int'l Trade Comm'n*, 988 F.2d 1165, 1179, 26 USPQ2d 1018, 1029 (Fed.Cir.1993).

A

[10, 11] The law provides that, in some very rare cases, obvious-type double patenting may be found between design and utility patents. See *Carman Indus., Inc. v. Wahl*, 724 F.2d 932, 939-40, 220 USPQ 481, 487 (Fed.Cir.1983) (noting that, while theoretically possible, "[d]ouble patenting is rare in the context of utility versus design patents"); *In re Thorington*, 57 C.C.P.A. 759, 418 F.2d 528, 536-37, 163 USPQ 644, 650 (CCPA 1969) (Double patenting between a design and utility patent is possible "if the features producing the novel aesthetic effect of a design patent or application are the same as those recited in the claims of a utility patent or application as producing a novel structure."); *In re Phelan*, 40 C.C.P.A. 1023, 205 F.2d 183, 98 USPQ 156 (CCPA 1953); *In re Barber*, 81 F.2d 231, 28 USPQ 187 (CCPA 1936); *In re Hargraves*, 53 F.2d 900, 11 USPQ 240 (CCPA 1931). In these cases, a "two-way" test is applicable. See *Carman*, 724 F.2d at 940, 220 USPQ at 487. Under this test, the obviousness-type double patenting rejection is appropriate only if the claims of the two patents cross-read, meaning that "the test is whether the subject matter of the claims of the patent sought to be invalidated would have been obvious from the subject matter of the claims of the other patent, and vice versa." *Id.*, 724 F.2d 932, 220 USPQ at 487. See also *Braat*, 937 F.2d at 593, 19 USPQ2d at 1292 (explaining two-way test).

B

In making its double patenting rejection, the Board concluded that all but one of the pending claims of Dembiczak's utility application would have been merely an obvious variation of the claims of the earlier-issued design patents—the Dembiczak '023 and '254 references—in light of the Holiday reference. The remaining claim, dependent claim 49, was judged obvious in light of the combination of the Dembiczak design patents, Holiday, and the Kessler reference.

[12, 13] Acknowledging that the two-way test was required by *Carman*, 724 F.2d at 940, 220 USPQ at 487, the Board concluded that "the design claimed in each of appellants' design patents does not exclude the features pertaining to the construction and color of the bag, the use of a plastic material for making the bag, the size or thickness of the bag . . . or the use of various types of filling material The particular details of the facial indicia would have been a matter of design choice as evidenced by the Holiday handbook," and that therefore, in view of Holiday, the claims of the design patents were obvious variants of the pending utility patent claims. See *Dembiczak*, slip op. at 11. We disagree. In order for a design to be unpatentable because of obviousness, there must first be a basic design reference in the prior art, the design characteristics of which are "basically the same as the claimed design." *In re Borden*, 90 F.3d 1570, 1574, 39 USPQ2d 1524, 1526 (Fed. Cir.1996); *In re Rosen*, 673 F.2d 388, 391, 213 USPQ 347, 350 (CCPA 1982). The phrase "having facial indicia thereon" found in the claims of the pending utility application is not a design reference that is "basically the same as the claimed design." *Borden*, 90 F.3d at 1574, 39 USPQ2d at 1526. In fact, it describes precious little with respect to design characteristics. The Board's suggestion that the design details were simply "a matter of design choice" evinces a misapprehension of the subject matter of design patents. *E.g.*, *Carman*, 724 F.2d at 939 n. 13, 220 USPQ at 486 n. 13 ("Utility patents afford protection for the mechanical structure and function of an invention whereas design patent protection concerns the ornamental or aesthetic features of a design.") Indeed, we note that the two design patents at issue here—the Dembiczak '023 and '254 patents—were considered nonobvious over each other, and were even the subject of a restriction requirement. See 35 U.S.C. § 121 (1994) ("If two or more independent and distinct inventions are claimed in one

application, the Commissioner may require the application to be restricted to one of the inventions."); 37 C.F.R. § 1.142. The position adopted by the Board—that a textual description of facial indicia found in the claims of the utility patent application makes obvious the specific designs claimed in the (patentably distinct) Dembiczak design patents—would presumably render obvious, or even anticipate, all design patents where a face was depicted on a bag. But this, of course, is not the law; the textual description cannot be said to be a reference "basically the same as the claimed design," of the design patents at issue here. *Borden*, 90 F.3d at 1574, 39 USPQ2d at 1526 (internal quotation marks omitted). The Board's conclusion of obviousness is incorrect.

Because we find that the Board erred in concluding that the design patents were obvious variants of the pending utility claims, we need not address the other prong of the two-way double patenting test—whether the pending utility claims are obvious variations of the subject matter claimed in the design patents. See *Carman*, 724 F.2d at 939, 220 USPQ at 487 (both prongs of the two-way test required for obviousness-type double patenting). The double patenting rejections are reversed.

IV

Because there is no evidence in the record of a suggestion, teaching, or motivation to combine the prior art references asserted against the pending claims, the obviousness rejections are reversed. In addition, because the Board misapprehended the test for obviousness-type double patenting, and because the pending utility claims do not render obvious the design patents, the double patenting rejections are also reversed.

REVERSED.



PENTAGEN TECHNOLOGIES INTERNATIONAL LIMITED, Plaintiff-Appellant,

v.

UNITED STATES, Defendant-Appellee.

No. 98-5133.

United States Court of Appeals,
Federal Circuit.

May 3, 1999.

Owner of copyright for computer software program brought infringement action against the United States. The United States Court of Federal Claims, James T. Turner, J., dismissed action, and owner appealed. The Court of Appeals, Friedman, Senior Circuit Judge, held that statute which bars recovery for any copyright infringement by the government committed more than three years before filing of complaint was not equitably tolled.

Affirmed.

1. Limitation of Actions ⇐104.5

Statute which bars recovery for any copyright infringement by the government committed more than three years before the filing of the complaint was not equitably tolled prior to copyright holder's receipt of witness statement disclosing infringement, absent allegation that government concealed the alleged infringement or that copyright holder was unaware of the infringement until such receipt. 28 U.S.C.A. § 1498(b).

2. Federal Civil Procedure ⇐1754

Even where equitable tolling might apply, a complaint properly may be dismissed for failure to state a claim as time-barred if (1) the face of the complaint shows that the claim is time-barred and (2)

First Amendment rights be no greater than necessary to the furtherance of the government interests. See *O'Brien*, 391 U.S. at 377, 88 S.Ct. at 1679. The ordinance satisfies this requirement because it is narrowly tailored to the problem targeted by the County—the undesirable community conditions associated with establishments that combine alcohol and nude dancing. There is no less restrictive alternative. The ordinance does not prohibit all nude dancing, but only restricts nude dancing in those locations where the unwanted secondary effects arise.

The County's ordinance satisfies all four prongs of the *O'Brien* test. The district court was therefore correct to grant summary judgment to Appellees on Appellants' First Amendment claims.

B. Restriction On Establishments Located In The Central Business District

[6] Appellant Mardi Gras also challenges the portion of the County's ordinance that prohibits adult entertainment establishment licenses from being issued to businesses operating in the Central Business District. We conclude the district court correctly determined Appellant's claim is defeated by the Supreme Court's decision in *City of Renton v. Playtime Theatres, Inc.*, 475 U.S. 41, 106 S.Ct. 925, 89 L.Ed.2d 29 (1986).

[7] In *Renton*, the Supreme Court held that a content-neutral zoning ordinance is "properly analyzed as a form of time, place, and manner regulation." *Id.* at 46, 106 S.Ct. at 928. Thus, like all content-neutral time, place, and manner regulations, zoning ordinances "are acceptable so long as they are designed to serve a substantial governmental interest and do not unreasonably limit alternative avenues of communication." *Id.* at 47, 106 S.Ct. at 928. The County's ordinance is content-neutral because, as previously noted, it focuses on the secondary effects of adult entertainment establishments. *Cf. id.* at 47-48, 106 S.Ct. at 929. We have determined the County's interests in passing

the ordinance were substantial. We further conclude the zoning provision does not unreasonably limit alternative avenues of communication. The ordinance solely prohibits Appellant from obtaining an adult entertainment establishment license for an establishment within the Central Business District. Appellant may operate an adult entertainment establishment in other locations outside the Central Business District, subject to other applicable zoning restrictions. The zoning provision of the ordinance thus satisfies the requirements of the First Amendment.

III. CONCLUSION

The County's ordinance prohibiting nude dancing at establishments that serve alcohol satisfies the four-part *O'Brien* test. The zoning provision of the ordinance is constitutional under *Renton*. Therefore, the County's Adult Entertainment Ordinance does not violate Appellants' First Amendment rights.

AFFIRMED.



In re Werner KOTZAB.

No. 99-1231.

(Reexamination No. 90/004,441).

**United States Court of Appeals,
Federal Circuit.**

June 30, 2000.

In reexamination proceeding, the Board of Patent Appeals and Interferences held that claims in patent involving temperature-controlled injection molding method for forming plastic articles were unpatentable for obviousness. Patentee appealed. The Court of Appeals, Linn Circuit Judge, held that patent claims were

not rendered obvious by prior art reference.

Reversed.

1. Patents \S 16(3)

A claimed invention is unpatentable if the differences between it and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art. 35 U.S.C.A. \S 103(a).

2. Patents \S 16.13

The ultimate determination of whether an invention would have been obvious under the patent statute is a legal conclusion based on underlying findings of fact. 35 U.S.C.A. \S 103(a).

3. Patents \S 113(6)

Court of Appeals reviews de novo an ultimate determination of obviousness by the Board of Patent Appeals and Interferences, but reviews the Board's underlying factual findings for substantial evidence. 35 U.S.C.A. \S 103(a).

4. Federal Courts \S 846

Substantial evidence is something less than the weight of the evidence but more than a mere scintilla of evidence, and, in reviewing the record for substantial evidence, Court of Appeals must take into account evidence that both justifies and detracts from the factual determinations.

5. Patents \S 113(6)

The possibility of drawing two inconsistent conclusions from the evidence does not prevent findings of the Board of Patent Appeals and Interferences from being supported by substantial evidence; indeed, if a reasonable mind might accept the evidence as adequate to support the factual conclusions drawn by the Board, then Court of Appeals must uphold the Board's determination.

6. Patents \S 16(3, 4)

Critical step in analyzing the patentability of claims, as to obviousness, is casting the mind back to the time of invention, to consider the thinking of one of ordinary

skill in the art, guided only by the prior art references and the then-accepted wisdom in the field, and close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher. 35 U.S.C.A. \S 103(a).

7. Patents \S 26(1)

Identification in the prior art of each individual part claimed in a patent is insufficient to defeat patentability of the whole claimed invention; rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant. 35 U.S.C.A. \S 103(a).

8. Patents \S 16.5(1)

Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. 35 U.S.C.A. \S 103(a).

9. Patents \S 26(1)

The motivation, suggestion, or teaching to combine prior art elements, as would support a finding of obviousness, may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, in some cases the nature of the problem to be solved. 35 U.S.C.A. \S 103(a).

10. Patents \S 26(1)

The teaching, motivation, or suggestion to combine prior art elements that would support a finding of obviousness may be implicit from the prior art as a whole, rather than expressly stated in the references; the test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of

ordinary skill in the art. 35 U.S.C.A. § 103(a).

11. Patents — 36(1)

Whether the Board of Patent Appeals and Interferences relies on an express or an implicit showing of some motivation, suggestion, or teaching to combine prior art elements, in analyzing obviousness of patent, it must provide particular findings related thereto; broad conclusory statements standing alone are not evidence. 35 U.S.C.A. § 103(a).

12. Patents — 16.14

Patent claims involving temperature-controlled injection molding method for forming plastic articles were not rendered obvious by prior art reference, as prior art reference did not teach or suggest use of single temperature sensor to control plurality of flow control valves, as set forth by patent claims. 35 U.S.C.A. § 103(a).

Robert F.I. Conte, Lee, Mann, Smith, McWilliams, Sweeney & Ohlson, of Chicago, Illinois, argued for appellant. Of counsel were Thomas Eugene Smith and James B. Conte.

Mark Nagumo, Associate Solicitor, U.S. Patent and Trademark Office, of Arlington, Virginia, argued for the appellee. With him on the brief were Albin F. Drost, Acting Solicitor, John M. Whealan, Acting Deputy Solicitor, and Stephen Walsh, Associate Solicitor.

Before LOURIE, GAJARSA, and LINN, Circuit Judges.

LINN, Circuit Judge.

DECISION

Werner Kotzab appeals from the final decision of the Board of Patent Appeals and Interferences ("Board") holding claims 1–10 in reexamination number 90/004,441 unpatentable for obviousness under 35 U.S.C. § 103(a). *See Ex Parte Kotzab*, Paper No. 17 (BPAI July 15, 1998). This case was submitted for our decision following oral argument on April 4, 2000. Because certain of the Board's key factual

findings relating to its obviousness analysis are not supported by substantial evidence, and because the Board erred in concluding that the claims would have been obvious as a matter of law, we reverse.

BACKGROUND

A. The Invention

The invention involves an injection molding method for forming plastic articles. In such methods, the temperature of the mold must be controlled so that the plastic can harden uniformly throughout the mold. Kotzab was confronted with the problem of providing optimal temperature control for an injection molding method to ensure the quality of the final product on the one hand, and achieving optimally short molding cycle times on the other hand. He arrived at a solution which is embodied in claim 1 of the reexamination as follows:

1. An improved method of controlling the temperature of an injection mold by pressure feeding molding material into a mold recess of an injection mold by an extruder, curing the material in the mold, and removing molded material from the mold, said pressure feeding, curing and removing being a molding cycle of recurring molding cycles and said recurring molding cycles having at least a first molding cycle and a second molding cycle,

comparing a preset nominal temperature to an actual temperature measured by at least one temperature sensor during said first molding cycle and said second molding cycle and supplying an amount of a temperature controlling medium to the first molding cycle and the second molding cycle, said amount of temperature controlling medium being dependent on the deviation between the actual temperature measured and the desired preset nominal temperature, the improvement comprising:

controlling, via a single sensor, a plurality of flow control valves for the tempera-

ture controlling medium to provide impulse temperature control medium to the first and second molding cycles, determining empirically or by calculation a quantitative spacial distribution of temperature controlling medium needed to obtain said desired preset nominal temperature during at least the first molding cycle and the second molding cycle and determining empirically or by calculation the conduits needed to be utilized to obtain the desired preset nominal temperature during at least the first molding cycle and the second molding cycle, comparing said desired preset nominal temperature to said actual temperature, at least once during the first molding cycle and the second molding cycle at a certain point in time being the same for each said molding cycle, such that said comparison made during said first cycle is synchronized with said comparison made during said second subsequent molding cycle, and said plurality of flow control valves are triggered during each said cycle to provide said impulse control medium, and said triggering being dependent on the deviation of temperature determined for each said comparison and also being dependent on a stored profile of said quantitative spacial distribution of the temperature controlling medium.

J.A. at 18-19.

Claim 3, which depends from claim 1, adds the following further limitation: "wherein a flow measuring turbine is associated with each flow control valve to detect the actual flow in each cycle and wherein a proportioning of a cooling or heating medium is effected in dependence on a comparison of a nominal flow to the actual flow." *Id.* at 19.

Claim 10, which depends from claim 3, additionally provides that "the rotation of said measuring turbine is transferred into pulses, so that the nominal flow [of the temperature controlling medium] can be fixed by the presetting of a corresponding number of pulses." *Id.* at 20.

B. The Reexamination Proceeding

U.S. Patent 5,427,720 ("the '720 patent") issued to Kotzab on June 27, 1995. A third party filed a request for reexamination on November 4, 1996. The reexamination was granted and assigned control no. 90/004,441. The amended claims were finally rejected by the Examiner, and Kotzab appealed the rejections to the Board. On July 15, 1998, the Board affirmed the Examiner's rejection of the claims for essentially the reasons expressed in the Examiner's Answer. The Board did, however, provide its own additional comments primarily for emphasis.

Specifically, the Board agreed with the Examiner that WO 92/08598 ("Evans") discloses a process of controlling the temperature of an injection mold by using a sensor to control the pulsing of a temperature control medium through the mold. Moreover, the Board found, as explained by the Examiner, that Evans discloses in a less preferred embodiment, using only one temperature measurement to control the coolant pulses rather than an average temperature measurement. *See Evans* application, p. 6, II. 17-23.

In addition, the Board found that Evans discloses that "the optimum timing of the cooling flow can be selected in accordance with the known temperature of the mould." *Id.* at II. 6-8. Furthermore, the Board found that a prior art promotional article discloses that manipulation of the geometry and layout of the cooling segment provides for the greatest improvement in molding cycle. *See Horst Wieder, Understanding the pulse modulated mold temperature control method*, (CITO Products, Inc., WI.) 1987, at p. 1, col. 2, II. 13-16. And, the Board determined that a May 1984 prior art article indicates that it was known to establish a cooling regime before the mold is produced, and that the determination of the cooling regime includes the number and location of the cooling conduits, as well as the volume of the coolant flow. Thus, the Board concluded that the evidence of record indicates that it

was known in the art to utilize empirical data to design the mold and the distribution of cooling channels in that mold. In view of the foregoing, the Board found that the empirical determination of the necessary spacial distribution of the length of the cooling pulses needed for delivering the appropriate coolant is disclosed by Evans or was known at the time the invention was made. Consequently, the Board affirmed the Examiner's rejection of claims 1, 2, and 4-9 under 35 U.S.C. § 103(a) as being unpatentable over Evans.

The Board made additional findings related to claims 3 and 10 in determining that they were also unpatentable under 35 U.S.C. § 103(a) over Evans in view of certain secondary references.

Kotzab filed a request for reconsideration, which the Board denied on November 24, 1998. In that decision, the Board reiterated agreement with the Examiner that it would have been obvious for one of ordinary skill in the art to utilize only one temperature measurement to control the coolant pulses in light of the Evans disclosure. Kotzab timely appealed the Board's decision to this court. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A) (1994).

DISCUSSION

A. Standard of Review

[1-3] A claimed invention is unpatentable if the differences between it and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art. See 35 U.S.C. § 103(a) (Supp. III 1997); *In re Dembiczak*, 175 F.3d 994, 998, 50 USPQ2d 1614, 1616 (Fed.Cir.1999). The ultimate determination of whether an invention would have been obvious under 35 U.S.C. § 103(a) is a legal conclusion based on underlying findings of fact. See *Dembiczak*, 175 F.3d at 998, 50 USPQ2d at 1616. We review the Board's ultimate determination of obviousness de novo. See *id.* However, we review the Board's underlying factual findings for substantial evi-

dence. See *In re Gartside*, 203 F.3d 1305, 1316, 53 USPQ2d 1769, 1776 (Fed.Cir. 2000).

[4,5] Substantial evidence is something less than the weight of the evidence but more than a mere scintilla of evidence. See *id.* at 1312, 203 F.3d 1305, 53 USPQ2d at 1773 (quoting *Consolidated Edison Co. v. NLRB*, 305 U.S. 197, 229-30, 59 S.Ct. 206, 83 L.Ed. 126 (1938)). In reviewing the record for substantial evidence, we must take into account evidence that both justifies and detracts from the factual determinations. See *id.* (citing *Universal Camera Corp. v. NLRB*, 340 U.S. 474, 487-88, 71 S.Ct. 456, 95 L.Ed. 456 (1951)). We note that the possibility of drawing two inconsistent conclusions from the evidence does not prevent the Board's findings from being supported by substantial evidence. See *id.* Indeed, if a reasonable mind might accept the evidence as adequate to support the factual conclusions drawn by the Board, then we must uphold the Board's determination. See *id.*

B. Analysis

[6] A critical step in analyzing the patentability of claims pursuant to section 103(a) is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. See *Dembiczak*, 175 F.3d at 999, 50 USPQ2d at 1617. Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher." *Id.* (quoting *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 313 (Fed.Cir.1983)).

[7,8] Most if not all inventions arise from a combination of old elements. See *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed.Cir.1998). Thus,

every element of a claimed invention may often be found in the prior art. *See id.* However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. *See id.* Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant. *See In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed.Cir. 1998); *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed.Cir.1984). Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. *See B.F. Goodrich Co. v. Aircraft Braking Sys. Corp.*, 72 F.3d 1577, 1582, 37 USPQ2d 1314, 1318 (Fed.Cir.1996).

[9-11] The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, in some cases the nature of the problem to be solved. *See Dembiczak*, 175 F.3d at 999, 50 USPQ2d at 1617. In addition, the teaching, motivation or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. *See WMS Gaming, Inc. v. International Game Tech.*, 184 F.3d 1339, 1355, 51 USPQ2d 1385, 1397 (Fed.Cir.1999). The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. *See In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (1981) (and cases cited therein). Whether the Board relies on an express or an implicit showing, it must provide particular findings related thereto. *See Dembiczak*, 175 F.3d at 999, 50 USPQ2d at 1617. Broad conclusory statements standing alone are not "evidence." *Id.*

[12] Kotzab's primary argument that the Board erred in holding claims 1-10

unpatentable under 35 U.S.C. § 103(a) over Evans, or Evans in view of secondary references, is that Evans does not teach or suggest the use of a single temperature sensor to control a plurality of flow control valves. We agree.

As noted previously, the Board adopted the Examiner's reasoning in upholding the rejection of the claims and added further comments. None of the Board's comments relate to the issue of Evans teaching or suggesting the use of one *sensor* to control a number of valves regulating coolant flow to the mold. Thus, we look to the Examiner's reasons for finding this limitation to be expressly taught or suggested in Evans.

The Examiner cites Evans for teaching that "one *system* constructed and operated according to the invention may be used to control a number of valves." Evans application, p. 19, II. 6-8 (emphasis added). In view of this disclosure only, the Examiner concluded that Evans teaches the use of one *sensor* to control a number of valves. This conclusion must necessarily rest on the unstated premise by the Examiner that "one system" is equal to "one sensor."

But the Board's decision, adopting the Examiner's premise, lacks the necessary substantial evidence to support a rejection of Kotzab's claims. Specifically, there is not substantial evidence to show that "one system" is the same thing as "one sensor." The words "sensor" and "probe" are used throughout Evans to refer to the device that measures the mold temperature. Evans uses the word "signal" to refer to the response generated by the measured temperature that controls the valves for coolant flow. Finally, the word "system" is used in Evans to refer to the overall temperature control system that is responsible for the valve timing for coolant flow to increase or decrease the temperature of the mold. Evans clearly never uses the term "system" as a substitute for the simple temperature measuring device it calls "sensor." And, the Board made no reference to any evidence in the record that

would equate "one system" with "one sensor."

As mentioned previously, more than a mere scintilla of evidence is necessary to support the Board's implicit conclusion that "one system" is equal to "one sensor." Based on the entirety of Evans' disclosure, we cannot say that there is such relevant evidence as a reasonable mind might accept as adequate to support the conclusion that "one system" means "one sensor."

The United States Patent and Trademark Office argues that because Evans teaches that a single sensor may be used to provide "the temperature measurement at a selected part of the machine," it necessarily follows that the Evans "system" discussed later may have a single sensor—and that single sensor may control more than one valve. *See id.* at p. 6, II: 21-23; p. 19, II: 6-8. While the test for establishing an implicit teaching, motivation, or suggestion is what the combination of these two statements of Evans would have suggested to those of ordinary skill in the art, the two statements cannot be viewed in the abstract. Rather, they must be considered in the context of the teaching of the entire reference. Further, a rejection cannot be predicated on the mere identification in Evans of individual components of claimed limitations. Rather, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.

We do not take issue with the argument that Evans suggests the concept of using the historic temperature obtained by one temperature measurement to control coolant pulses. *See id.* at p. 5, II: 14-22; p. 6, II: 17-23. However, there is not substantial evidence of record to extrapolate this teaching to the multiple zone system described later in Evans. *See id.* at p. 18, I: 22 to p. 19, I: 8. In the multiple zone system, Evans describes the use of a temperature sensor and an associated flow control valve in each zone. At most, the combined teachings suggest that the his-

toric temperature of a mold zone may be measured by one sensor and as part of a multiple zone system where multiple valves are controlled, that one sensor measurement can be used to control the valve for that zone. Thus, we cannot say that there is such relevant evidence as a reasonable mind might accept as adequate to support the conclusion that where there are a plurality of control valves in a multiple zone setting, only one temperature sensor provides the control for a plurality of valves.

Moreover, we cannot say that there is such relevant evidence as a reasonable mind might accept as adequate to support implicitly the conclusion that a skilled artisan confronted with (1) the problem noted by Kotzab, i.e., providing optimal temperature control for an injection molding method to ensure the quality of the final product on the one hand, and achieving optimally short molding cycle times on the other hand, and (2) the two statements in Evans, would have been motivated to control a plurality of valves in a multiple zone setting with only one temperature sensor.

In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the manner claimed. In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper *prima facie* case of obviousness in rejecting claims 1, 2, and 4-9 under 35 U.S.C. § 103(a) over Evans. Moreover, because the rejections of claims 3 and 10 rely upon the foregoing, we also

conclude that the Board did not make out a proper *prima facie* case of obviousness in rejecting those claims under 35 U.S.C. § 103(a).

CONCLUSION

For the above reasons, we conclude that there is not substantial evidence to support the Board's finding of fact that Evans expressly teaches that "one sensor" may be used to control a plurality of valves, and there is not substantial evidence of record, either expressly or implicitly, to modify the teachings of Evans to obtain a system in which one sensor controls a plurality of valves. Accordingly, we

REVERSE



Rayburn F. HESSE, Petitioner,

v.

DEPARTMENT OF STATE,

Respondent.

No. 99-3387.

United States Court of Appeals,

Federal Circuit.

July 6, 2000.

Suspended State Department employee petitioned for review of initial decision that dismissed his appeal for lack of jurisdiction. The Merit Systems Protection Board, 82 M.S.P.R. 489, denied petition for review, reopened case on its own motion, vacated initial decision, and affirmed State Department's action in suspending employee's Top Secret security clearance and then indefinitely suspending him from his position with the agency. Employee appealed. The Court of Appeals, Bryson, Circuit Judge, held that: (1) MSPB lacked jurisdiction over employee's claim that he had been stripped of a security clearance in retaliation for whistleblowing, absent clear indication from Congress that Board was meant to review security clearance

determinations when raised in an appeal under Whistleblower Protection Act (WPA); (2) employee's statutory procedural rights were not violated in agency hearing on the issue of the suspension of his security clearance; (3) employee was not entitled to be reassigned to a nonsensitive position rather than being suspended from employment with agency; and (4) employee's due process rights were not violated.

Affirmed.

1. Officers and Public Employees ⇨72.23

Merit Systems Protection Board (MSPB) lacked jurisdiction over State Department employee's claim that he had been stripped of a security clearance in retaliation for whistleblowing, absent clear indication from Congress that the Board was meant to review security clearance determinations when raised in an appeal under Whistleblower Protection Act (WPA). 5 U.S.C.A. §§ 1221(a), 2302(a)(2).

2. Officers and Public Employees ⇨72.22, 72.41(1)

There is no presumption that security clearance determinations will be subject to administrative or judicial review, as those determinations are committed to the broad discretion of the responsible Executive Branch agency.

3. Officers and Public Employees ⇨72.22

Unless Congress specifically provides otherwise, Merit Systems Protection Board (MSPB) is not authorized to review security clearance determinations or agency actions based on security clearance determinations.

4. Officers and Public Employees ⇨72.31

When agency action is challenged under the provisions of federal employment law governing adverse actions, Merit Systems Protection Board (MSPB) may determine whether a security clearance was denied, whether the security clearance was a

2. 35 U.S.C. 102(e) as amended by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 (form paragraph 7.12) must be applied if the reference is one of the following:

- a. a U.S. patent or a publication of a U.S. application for patent filed under 35 U.S.C. 111(a);
- b. a U.S. patent issued directly or indirectly from, or a U.S. or WIPO publication of, an international application if the international application has an international filing date on or after November 29, 2000.

See the Examiner Notes for form paragraph 7.12 to assist in the determination of the 35 U.S.C. 102(e) date of the reference.

3. Pre-AIPA 35 U.S.C. 102(e) (form paragraph 7.12.01) must be applied if the reference is a U.S. patent issued directly, or indirectly, from an international application filed prior to November 29, 2000. See the Examiner Notes for form paragraph 7.12.01 to assist in the determination of the 35 U.S.C. 102(e) date of the reference.

4. In determining the 35 U.S.C. 102(e) date, consider priority/benefit claims to earlier-filed U.S. provisional applications under 35 U.S.C. 119(e), U.S. nonprovisional applications under 35 U.S.C. 120 or 121, and international applications under 35 U.S.C. 120, 121 or 365(c) if the subject matter used to make the rejection is appropriately supported in the relied upon earlier-filed application's disclosure (and any intermediate application(s)). A benefit claim to a U.S. patent of an earlier-filed international application, which has an international filing date prior to November 29, 2000, may only result in an effective U.S. filing date as of the date the requirements of 35 U.S.C. 371(c)(1), (2) and (4) were fulfilled. Do NOT consider any priority/benefit claims to U.S. applications which are filed before an international application that has an international filing date prior to November 29, 2000. Do NOT consider foreign priority claims under 35 U.S.C. 119(a)-(d) and 365(a).

5. If the reference is a publication of an international application (including voluntary U.S. publication under 35 U.S.C. 122 of the national stage or a WIPO publication) that has an international filing date prior to November 29, 2000, did not designate the United States or was not published in English by WIPO, do not use this form paragraph. Such a reference is not a prior art reference under 35 U.S.C. 102(e). The reference may be applied under 35 U.S.C. 102(a) or (b) as of its publication date. See form paragraphs 7.08 and 7.09.

6. In bracket 2, insert either --clearly anticipated-- or --anticipated-- with an explanation at the end of the paragraph.

7. In bracket 3, insert the prior art relied upon.

8. This form paragraph must be preceded by either of form paragraphs 7.12 or 7.12.01.

9. Patent application publications may only be used if this form paragraph was preceded by form paragraph 7.12.

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¶ 7.16 Rejection, 35 U.S.C. 102(b), Public Use or on Sale

Claim [1] rejected under 35 U.S.C. 102(b) based upon a public use or sale of the invention. [2]

Examiner Note:

1. This form paragraph must be preceded either by form paragraphs 7.07 and 7.09 or by form paragraph 7.103.
2. A full explanation of the evidence establishing a public use or sale must be provided in bracket 2.

¶ 7.17 Rejection, 35 U.S.C. 102(c), Abandonment of Invention

Claim [1] rejected under 35 U.S.C. 102(c) because the invention has been abandoned. [2]

Examiner Note:

1. This form paragraph must be preceded either by form paragraphs 7.07 and 7.10 or by form paragraph 7.103.
2. In bracket 2, insert a full explanation of the evidence establishing abandonment of the invention. See MPEP § 2134.

¶ 7.18 Rejection, 35 U.S.C. 102(d), Foreign Patenting

Claim [1] rejected under 35 U.S.C. 102(d) as being barred by applicants [2].

[3]

Examiner Note:

1. This form paragraph must be preceded either by form paragraphs 7.07 and 7.11 or by form paragraph 7.103.
2. In bracket 3, insert an explanation of this rejection which must include appropriate dates and how they make the foreign patent available under 35 U.S.C. 102(d).
3. Refer to MPEP § 2135 for applicable 35 U.S.C. 102(d) prior art.

¶ 7.19 Rejection, 35 U.S.C. 102(f), Applicant Not the Inventor

Claim [1] rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter. [2]

Examiner Note:

1. This paragraph must be preceded either by paragraphs 7.07 and 7.13 or by paragraph 7.103.
2. In bracket 2, insert an explanation of the supporting evidence establishing that applicant was not the inventor. See MPEP § 2137.

706.02(j) Contents of a 35 U.S.C. 103 Rejection

35 U.S.C. 103 authorizes a rejection where, to meet the claim, it is necessary to modify a single reference or to combine it with one or more other references. After indicating that the rejection is under 35 U.S.C. 103, the examiner should set forth in the Office action:

(A) the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line number(s) where appropriate,

(B) the difference or differences in the claim over the applied reference(s),

(C) the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter, and

(D) an explanation why one of ordinary skill in the art at the time the invention was made would have been motivated to make the proposed modification.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143 - § 2143.03 for decisions pertinent to each of these criteria.

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). See MPEP § 2144 - § 2144.09 for examples of reasoning supporting obviousness rejections.

Where a reference is relied on to support a rejection, whether or not in a minor capacity, that reference should be positively included in the statement of the rejection. See *In re Hoch*, 428 F.2d 1341, 1342 n.3 166 USPQ 406, 407 n. 3 (CCPA 1970).

It is important for an examiner to properly communicate the basis for a rejection so that the issues can be identified early and the applicant can be given fair opportunity to reply. Furthermore, if an initially rejected application issues as a patent, the rationale behind an earlier rejection may be important in inter-

preting the scope of the patent claims. Since issued patents are presumed valid (35 U.S.C. 282) and constitute a property right (35 U.S.C. 261), the written record must be clear as to the basis for the grant. Since patent examiners cannot normally be compelled to testify in legal proceedings regarding their mental processes (see MPEP § 1701.01), it is important that the written record clearly explain the rationale for decisions made during prosecution of the application.

See MPEP § 2141 - § 2144.09 generally for guidance on patentability determinations under 35 U.S.C. 103, including a discussion of the requirements of *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966). See MPEP § 2145 for consideration of applicant's rebuttal arguments. See MPEP § 706.02(l) - § 706.02(l)(3) for a discussion of prior art disqualified under 35 U.S.C. 103(c).

706.02(k) Provisional Rejection (Obviousness) Under 35 U.S.C. 102(e)/103 [R-1]

Effective November 29, 1999, subject matter which was prior art under former 35 U.S.C. 103 via 35 U.S.C. 102(e) is now disqualified as prior art against the claimed invention if that subject matter and the claimed invention "were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person." This change to 35 U.S.C. 103(c) applies to all utility, design and plant patent applications filed on or after November 29, 1999, including continuing applications filed under 37 CFR 1.53(b), continued prosecution applications filed under 37 CFR 1.53(d), and reissues. The amendment to 35 U.S.C. 103(c) does not affect any application filed before November 29, 1999, a request for examination under 37 CFR 1.129 of such an application, nor a request for continued examination under 37 CFR 1.114 of such an application. >The changes to 35 U.S.C. 102(e) in the Intellectual Property and High Technology Technical Amendments Act of 2002 (Pub. L. 107-273, 116 Stat. 1758 (2002)) did not affect the exclusion under 35 U.S.C. 103(c) as amended on November 29, 1999.< See MPEP § 706.02(l)(1) for additional information regarding disqualified prior art under 35 U.S.C. 102(e)/103.

ences themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

2143.01 Suggestion or Motivation To Modify the References [R-1]

THE PRIOR ART MUST SUGGEST THE DESIRABILITY OF THE CLAIMED INVENTION

"There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a *prima facie* case of obvious was held improper.). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

"In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification." *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be

solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Lee*, 277 F.3d 1338, 1342-44, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002) (discussing the importance of relying on objective evidence and making specific factual findings with respect to the motivation to combine references); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In *In re Kotzab*, the claims were drawn to an injection molding method using a single temperature sensor to control a plurality of flow control valves. The primary reference disclosed a multizone device having multiple sensors, each of which controlled an associated flow control valve, and also taught that one *system* may be used to control a number of valves. The court found that there was insufficient evidence to show that one *system* was the same as one *sensor*. While the control of multiple valves by a single sensor rather than by multiple sensors was a "technologically simple concept," there was no finding "as to the specific understanding or principle within the knowledge of the skilled artisan" that would have provided the motivation to use a single sensor as the system to control more than one valve. 217 F.3d at 1371, 55 USPQ2d at 1318.

In *In re Fine*, the claims were directed to a system for detecting and measuring minute quantities on nitrogen compounds comprising a gas chromatograph, a converter which converts nitrogen compounds into nitric oxide by combustion, and a nitric oxide detector. The primary reference disclosed a system for monitoring sulfur compounds comprising a chromatograph, combustion means, and a detector, and the secondary reference taught nitric oxide detectors. The examiner and Board asserted that it would have been within the skill of the art to substitute one type of detector for another in the system of the primary reference, however the court found there was no support or explanation of this conclusion and reversed.

In *In re Jones*, the claimed invention was the 2-(2- ϕ -aminoethoxy) ethanol salt of dicamba, a compound with herbicidal activity. The primary reference disclosed *inter alia* the substituted ammonium salts of dicamba as herbicides, however the reference did not specifically teach the claimed salt. Secondary refer-

sustained the rejection, finding that the teachings of the prior art provide a sufficient basis for a reasonable expectation of success.); *Ex parte Blanc*, 13 USPQ2d 1383 (Bd. Pat. App. & Inter. 1989) (Claims were directed to a process of sterilizing a polyolefinic composition with high-energy radiation in the presence of a phenolic polyester antioxidant to inhibit discoloration or degradation of the polyolefin. Appellant argued that it is unpredictable whether a particular antioxidant will solve the problem of discoloration or degradation. However, the Board found that because the prior art taught that appellant's preferred antioxidant is very efficient and provides better results compared with other prior art antioxidants, there would have been a reasonable expectation of success.).

AT LEAST SOME DEGREE OF PREDICTABILITY IS REQUIRED; APPLICANTS MAY PRESENT EVIDENCE SHOWING THERE WAS NO REASONABLE EXPECTATION OF SUCCESS

Obviousness does not require absolute predictability, however, at least some degree of predictability is required. Evidence showing there was no reasonable expectation of success may support a conclusion of nonobviousness. *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976) (Claims directed to a method for the commercial scale production of polyesters in the presence of a solvent at superatmospheric pressure were rejected as obvious over a reference which taught the claimed method at atmospheric pressure in view of a reference which taught the claimed process except for the presence of a solvent. The court reversed, finding there was no reasonable expectation that a process combining the prior art steps could be successfully scaled up in view of unchallenged evidence showing that the prior art processes individually could not be commercially scaled up successfully.). See also *Amgen, Inc. v. Chugai Pharmaceutical Co.*, 927 F.2d 1200, 1207-08, 18 USPQ2d 1016, 1022-23 (Fed. Cir.), *cert. denied*, 502 U.S. 856 (1991) (In the context of a biotechnology case, testimony supported the conclusion that the references did not show that there was a reasonable expectation of success.); *In re O'Farrell*, 853 F.2d 894, 903, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988) (The court held the claimed method would have been obvious

over the prior art relied upon because one reference contained a detailed enabling methodology, a suggestion to modify the prior art to produce the claimed invention, and evidence suggesting the modification would be successful.).

PREDICTABILITY IS DETERMINED AT THE TIME THE INVENTION WAS MADE

Whether an art is predictable or whether the proposed modification or combination of the prior art has a reasonable expectation of success is determined at the time the invention was made. *Ex parte Erlich*, 3 USPQ2d 1011 (Bd. Pat. App. & Inter. 1986) (Although an earlier case reversed a rejection because of unpredictability in the field of monoclonal antibodies, the court found "in this case at the time this invention was made, one of ordinary skill in the art would have been motivated to produce monoclonal antibodies specific for human fibroblast interferon using the method of [the prior art] with a reasonable expectation of success." 3 USPQ2d at 1016 (emphasis in original).).

2143.03 All Claim Limitations Must Be Taught or Suggested

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

INDEFINITE LIMITATIONS MUST BE CONSIDERED

A claim limitation which is considered indefinite cannot be disregarded. If a claim is subject to more than one interpretation, at least one of which would render the claim unpatentable over the prior art, the examiner should reject the claim as indefinite under 35 U.S.C. 112, second paragraph (see MPEP § 706.03(d)) and should reject the claim over the prior art based on the interpretation of the claim that ren-

ders the prior art applicable. *Ex parte Ionescu*, 222 USPQ 537 (Bd. Pat. App. & Inter. 1984) (Claims on appeal were rejected on indefiniteness grounds only; the rejection was reversed and the case remanded to the examiner for consideration of pertinent prior art.). Compare *In re Wilson*, 424 F.2d 1382, 165 USPQ 494 (CCPA 1970) (if no reasonably definite meaning can be ascribed to certain claim language, the claim is indefinite, not obvious) and *In re Steele*, 305 F.2d 859, 134 USPQ 292 (CCPA 1962) (it is improper to rely on speculative assumptions regarding the meaning of a claim and then base a rejection under 35 U.S.C. 103 on these assumptions).

LIMITATIONS WHICH DO NOT FIND SUPPORT IN THE ORIGINAL SPECIFICATION MUST BE CONSIDERED

When evaluating claims for obviousness under 35 U.S.C. 103, all the limitations of the claims must be considered and given weight, including limitations which do not find support in the specification as originally filed (i.e., new matter). *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983) *aff'd mem.* 738 F.2d 453 (Fed. Cir. 1984) (Claim to a catalyst expressly excluded the presence of sulfur, halogen, uranium, and a combination of vanadium and phosphorous. Although the negative limitations excluding these elements did not appear in the specification as filed, it was error to disregard these limitations when determining whether the claimed invention would have been obvious in view of the prior art.).

2144 Sources of Rationale Supporting a Rejection Under 35 U.S.C. 103

RATIONALE MAY BE IN A REFERENCE, OR REASONED FROM COMMON KNOWLEDGE IN THE ART, SCIENTIFIC PRINCIPLES, ART-RECOGNIZED EQUIVALENTS, OR LEGAL PRECEDENT

The rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*,

958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). See also *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (setting forth test for implicit teachings); *In re Eli Lilly & Co.*, 902 F.2d 943, 14 USPQ2d 1741 (Fed. Cir. 1990) (discussion of reliance on legal precedent); *In re Nilssen*, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988) (references do not have to explicitly suggest combining teachings); *Ex parte Clapp*, 227 USPQ 972 (Bd. Pat. App. & Inter. 1985) (examiner must present convincing line of reasoning supporting rejection); and *Ex parte Levensgood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993) (reliance on logic and sound scientific reasoning).

THE EXPECTATION OF SOME ADVANTAGE IS THE STRONGEST RATIONALE FOR COMBINING REFERENCES

The strongest rationale for combining references is a recognition, expressly or impliedly in the prior art or drawn from a convincing line of reasoning based on established scientific principles or legal precedent, that some advantage or expected beneficial result would have been produced by their combination. *In re Sernaker*, 702 F.2d 989, 994-95, 217 USPQ 1, 5-6 (Fed. Cir. 1983).

LEGAL PRECEDENT CAN PROVIDE THE RATIONALE SUPPORTING OBVIOUSNESS ONLY IF THE FACTS IN THE CASE ARE SUFFICIENTLY SIMILAR TO THOSE IN THE APPLICATION

The examiner must apply the law consistently to each application after considering all the relevant facts. If the facts in a prior legal decision are sufficiently similar to those in an application under examination, the examiner may use the rationale used by the court. If the applicant has demonstrated the criticality of a specific limitation, it would not be appropriate to rely solely on case law as the rationale to support an obviousness rejection. "The value of the exceedingly large body of precedent wherein our predecessor courts and this court have applied the law of obviousness to particular facts, is that there has been built a wide spectrum of illustrations and accompanying reasoning, that have been melded into a fairly consistent application of law to a great variety of facts." *In re Eli*